OCTOBER '57

MODERN TEXTILES

MAGAZINE

Specializing in Man-Made Fibers and Blends since 1925

FIBERS

FABRICS

FINISHES

Reeves Brothers' JOHN M. REEVES, an unfaltering optimist on Worth Street -- Story page 31

THIS MONTH'S SPECIAL FEATURES

Zefran performs in fabrics

Weaving stripes and spots

Improve your mill cooling

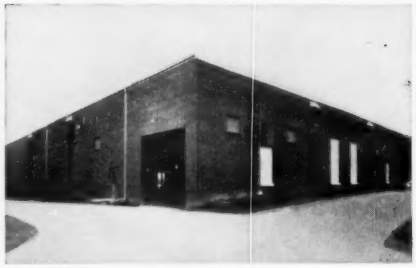
Blending synthetics with wool

AND 14 MORE EXCLUSIVE REPORTS AND TIMELY ARTICLES

Service - Efficiency

Office building and machine shop

Located in the heart of the textile industry Gaston County Dyeing Machine Company is in a unique position to serve your needs for processing equipment, recently expanded facilities enhance this position.



New assembly plant

SALES REPRESENTATIVES

READY, WILLING AND ANXIOUS TO SERVE YOU

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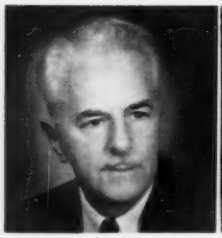
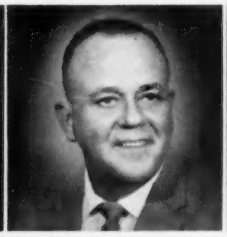
ADDRESS: HOME OFFICE



George Hacker

Ray Craig

Gordon Hacker



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Stainless Steel Fabricators — Process Tanks and Pipe

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CHEESE CORES

for firmer packages – for better delivery

SONOCO's sturdy and economical DUROWELD cores are the type carriers essential for repeated use in winding good packages of yarn. Cores produced by the exclusive DUROWELD process are held to micrometer tolerances and are accurately balanced — assuring good performance during high speed winding and take-off. Standard sizes to fit Abbott Automatic Winders and Barber-Colman Spoolers. Special sizes also available.

Remember—for the best packages, use the best carriers—try SONOCO's DUROWELD cheese cores—another development for industry from SONOCO's research laboratories.

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MODERN
TEXTILES MAGAZINE

October, 1957 Vol. 38, No. 10

Modern Textiles Magazine
Established 1925

* * *

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303 Fifth Ave., New York 16, N. Y.
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The Principal Trade Groups

Man-Made Fiber Producers Association ..... Empire State Bldg., New York
National Federation of Textiles, Inc. ..... 389 Fifth Ave., New York
American Association of Textile Chemists and Colorists ..... Lowell Techn. Inst., Lowell, Mass.
American Association for Textile Technology, Inc. ..... 100 W. 55th St., New York
Silk and Rayon Printers and Dyers Ass'n of America, Inc. ..... 1450 Broadway, New York
Synthetic Organic Chemical Manufacturers Association ..... 41 E. 42nd St., New York
Textile Distributors Institute, Inc. ..... 469 Seventh Ave., New York
American Rayon Institute ..... 350 Fifth Avenue, New York

Departments

Reprints of Denier Tables, Fiber Review

Reprints of the special fold-out Tables of Denier Numbers and Filament Counts which appeared in our September issue are available at 50 cents each. Orders of more than 15 copies can be had at a special price of 35 cents.

Also available at the same price are reprints of Modern Textiles Magazine's Annual Man-Made Fiber Review and Outlook, a special 20 page section in last month's issue.

Exhibitors Sign for AATCC Show

General Electric Co. and Nu-Lite Co. have recently joined the companies that have signed for exhibit space at the textile wet processing exhibit of the American Association of Textile Chemists & Colorists, to be held in conjunction with the association's annual convention Nov. 14-16 at the Hotel Statler in Boston, Mass.

Although space is nearly all sold out, Richard R. Frey, of AATCC's staff said that a few desirable booth areas are still available.

New Rayon Tire Yarn

Limited production of a new rayon tire yarn, "Tenasco" Super "401", will be started shortly by Courtaulds (Canada) Ltd. The company said that in comparing cost in cents per pound, per unit of strength, "Tenasco" makes rayon cord 25% lower in cost than the strongest competitive material. *For further information write the editors.*

Rayon Tire Cord Drops

Production of tire cord and tire fabrics in the 1957 second quarter totaled 115,418,000 pounds, the U. S. Department reported. This was 7% below the first quarter but 3% above the 1956 second quarter. Output of rayon tire cord and tire cord fabric dropped 13% to 79,232,000 pounds in the second quarter from the previous quarter's 91,482,000 pounds.

Production of nylon tire cord and tire cord fabric increased 21% in the 1957 period to 22,149,000 pounds, while output of cotton tire cord and tire cord fabric (excluding chafer fabrics) decreased 2% to 13,159,000 pounds.

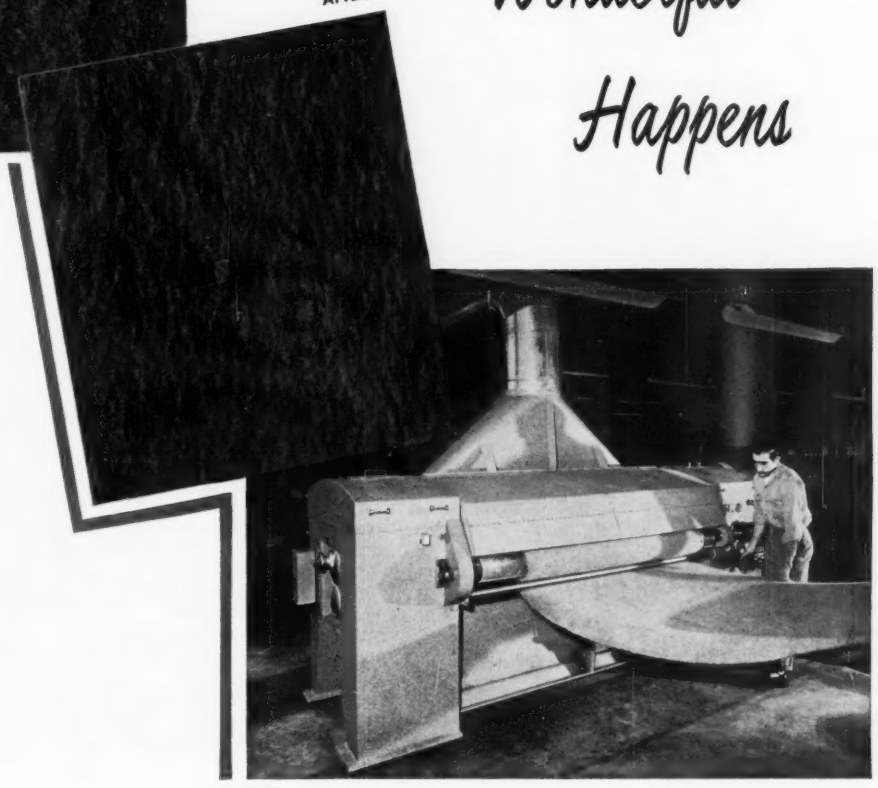
Man-Made Fiber Water Use

More water was used for manufacturing rayon and acetate fiber in this country in 1953 than was withdrawn from the combined public supplies of all the cities and towns in New England, the U. S. Department of the Interior reported. During that year, the Department said, the industry used about 920 million gallons daily, or about 1% of the total estimated withdrawals of water for industrial use in this country. Of this, about 300,000,000 gallons per day were used in the preparation of purified wood cellulose and cotton linters. The remainder was used in converting these materials to rayon and acetate fiber.

About 110 gallons of water are required to produce a pound of rayon fiber and some 170 gallons to produce a pound of acetate fiber. However, only slightly more than 1% of the water is "consumed" in the process.

The Geological Survey has prepared a report on "Water Requirements of the Rayon and Acetate Fiber Industry." *Copies of the report at 20 cents each may be obtained by writing the editors.*

Something Wonderful Happens



to woolen and worsted fabrics in the Turbo Electro-Finisher

The pictures tell part of the story — you can see the new texture, the new laid-down finish. But, you have to see the fabric itself to appreciate the rich, vibrant luster achieved in the Turbo Electro-Finisher.

What makes the fabric glow? It's the way the Turbo Electro-Finisher separates and straightens the fibers and lays them down to catch and reflect highlights. The luster will amaze you!

Finishing procedures are simple. The equipment is almost completely mechanical and automatic.

Send samples for finishing or write for folder.

TURBO MACHINE COMPANY
LANSDALE, PA.

A Quarter Century of Manufacturing Precision Machines for the Textile Industry

Letters to the Editor

Common Market—not Ruin

Manchester, England

I read with great interest what you say on page 46 of your August issue about the attitude of my Association to British participation in a European Free Trade Area.

The passage in which you say we are battling to keep the United Kingdom out of such a project could be taken to mean that we are totally opposed to participation in a Free Trade Area in any circumstances. This would be quite wrong as we are not totally opposed to joining a Free Trade Area. Whether it would be advisable for us to do so or not would depend upon the terms and conditions under which we could join such an Area. We are consequently not yet in a position to say whether we would oppose joining a Free Trade Area until we know what those terms and conditions would be.

We are, of course, totally opposed to any arrangement which has the effect of opening European markets to oriental and other fabrics selling at disruptive prices. But if satisfactory arrangements are made to deal with this problem we might still be willing to join a Free Trade Area dependent on what the other terms and conditions for such an Area would be. R. W. PENNINGTON, *Chairman, The Rayon Weaving Association.*

Creslan Marketing Unit

The Fibers Division, American Cyanamid Co., has established a sales and merchandising organization for Creslan, the company's acrylic fiber. The following four department managers have been named to head sales and merchandising in Creslan's principal end-product areas: Charles D. Reich, woven goods field; George P. Vescio, knit goods field; William G. Fash, home furnishings field, and Ivan Y. T. Feng, export and special product sales. R. J. G. Schofield has been appointed manager of technical services. W. L. Lyall, Jr., general sales manager for the Fibers Division, will supervise all sales, merchandising and technical service operations of the new unit.

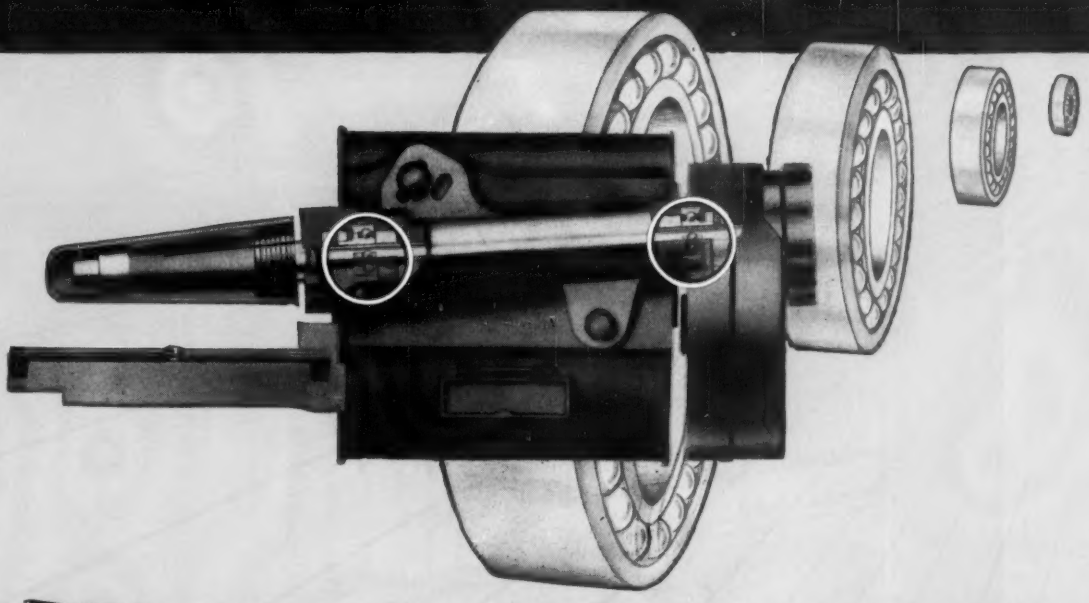
Auto Seat Fabric Competition

The Automobile Seat Cover Manufacturers Association has new data on the use of woven textiles and woven saran materials in automobile seat covers. Following is a table giving the relative percentages of materials used and dollar value for 1956 when the industry sold about $250,000,000 worth of seat covers at the retail level:

	—Percentages—	
	Units	Dollars
Saran (woven plastic)	32	35
Jet spun (rayon)	9	11
Fiber (twisted)	29	21
Clear plastic	25	26
Miscellaneous	5	7

The association said each material has its own advantages and disadvantages. Among the main advantages: woven materials—they are porous and do not become excessively hot in summer or excessively cold in winter; woven saran—compared to other woven materials it is sturdier, easier to clean; jet spun or rayon—more expensive but smoother and more pliable; fiber (made of twisted paper products coated with plastic)—is economical and sturdy but generally feels stiffer than other materials.

BALL BEARING SPINDLES



REDUCE POWER COSTS-SPINDLE REPLACEMENT!

GET MONEY-SAVING EFFICIENCY WITH FOSTER MODEL 75!

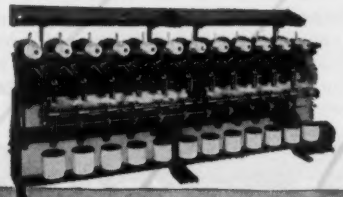
Efficient ball bearing spindles are an outstanding feature of the Foster Model 75 Winder. Power for a 30 spindle machine is effectively supplied by a 2 h. p. motor.

Besides lowering power consumption, the ball bearing spindle improves the mechanical performance of the winder and prevents oil spotting of the yarn. These spindles operate indefinitely without replacement.

In performance . . . in money-saving features . . . the dollar-for-dollar answer for filament and cotton thread yarn winding is Foster Model 75.

SOME OF THE OTHER IMPORTANT FEATURES OF THE MODEL 75:

1. Winds standard Foster convex base cones or, with special added attachment, pineapple cones.
2. When equipped to wind pineapple cones, the starting traverse may be varied between 4″ and 6″.
3. Depending on type of yarn and other conditions, cone density may also be varied between 40 and 70 by Durometer reading.
4. A slow starting device prevents yarn strain.
5. Total enclosure of the lubricated parts prevents yarn soilage.

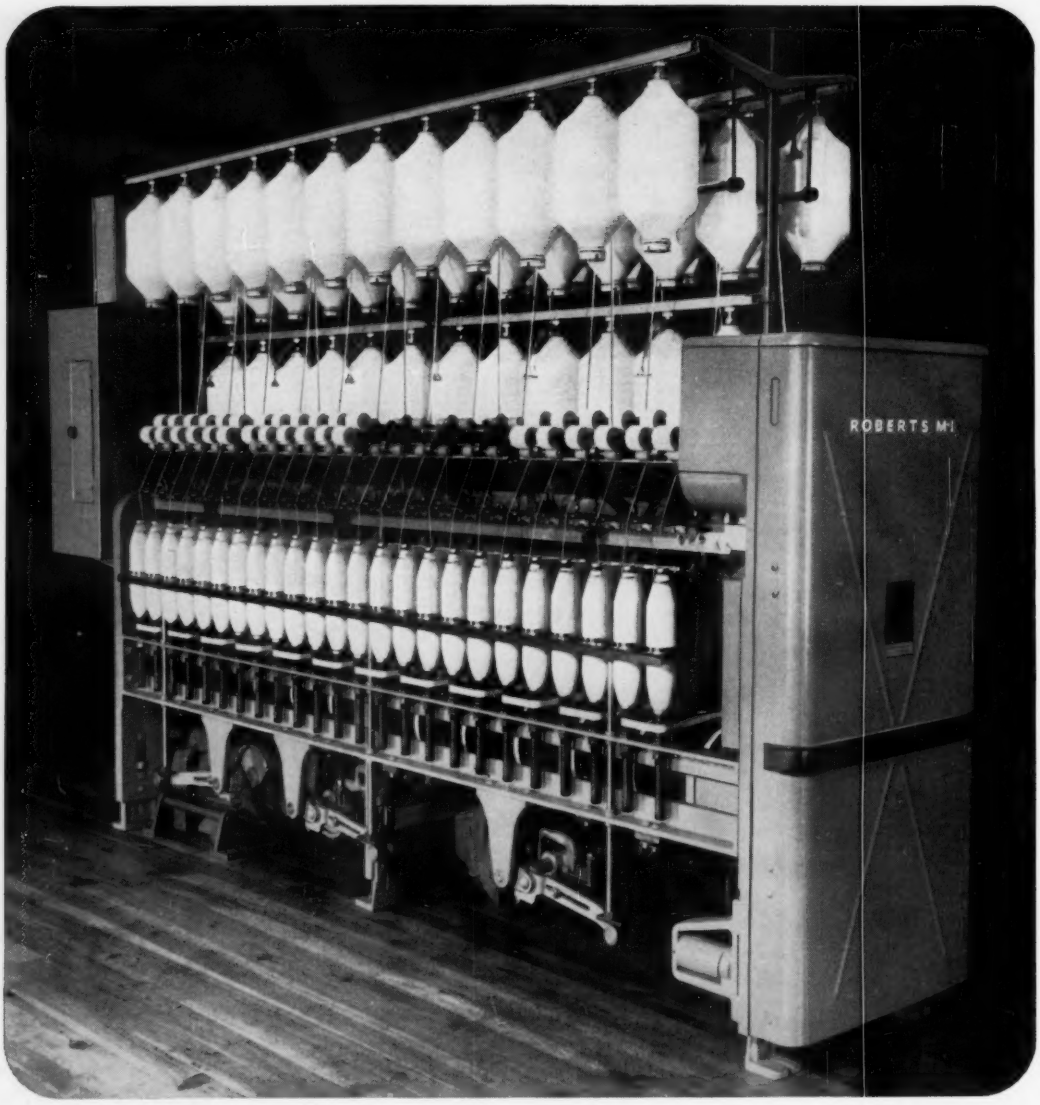


Bulletin A-92B on request

FOSTER MACHINE CO., Westfield, Mass.

Southern Office — Johnston Bldg., Charlotte, N. C. • *Canadian Representative* — Ross Whitehead and Company Limited, 1475 Mountain St., Montreal, Que. and 100 Dixie Plaza, Port Credit, Ont. • *European Representative*—Muschamp Textile Machinery Limited, Keb Lane Bardsley, Oldham, England.

FOSTER MODEL 75 FOR WINDING FILAMENT YARNS OF ALL TYPES AND COTTON THREAD YARNS



ROBERTS SPINNING

ALL NEW—ALL BALL BEARING ROBERTS M-1 SPINNING FRAME

MODERN IN DESIGN

Into the rugged simplicity of the Roberts M-1 chassis has been built all the ball bearing features needed to provide the smooth operation and productivity for today's and tomorrow's production goals. Standard features include:

- BALL BEARING TOP ROLL SUSPENSION
- BALLOON CONTROL ARRANGEMENT
- BUILT-IN UnitVac SUCTION CLEANING
- EXTRA CAPACITY SPINDLES
- FULL BALL BEARING HEAD
- UMBRELLA CREEL
- 45 DEGREE ROLL STANDS
- STEEL BASE RAILS, ROLL BEAMS, RING RAILS
- ADJUSTABLE DRAFT CONSTANT, 500 TO 3000
- TURNKEY ERECTION AND STARTUP

PROVEN IN PERFORMANCE

New Roberts Spinning has been running in the mill since February 1956 and has proven itself not only most economical in initial cost but low in maintenance. One large user with more than 150 frames in continuous production reports that the new Roberts Spinning runs with higher front roll speeds, better yarn quality and substantially lower ends down than the several thousand frames of other makes in operation in their mills.

ROBERTS COMPANY

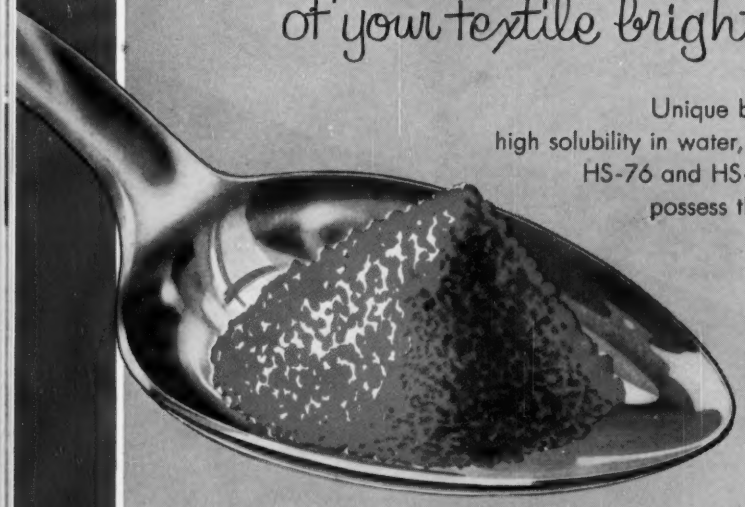
SANFORD, NORTH CAROLINA

BLANCOPHOR HS BRANDS

for the "Easy Solution" of your textile brightening problems...

Unique because of their exceptionally high solubility in water, BLANCOPHOR HS-71, HS-76 and HS-31 optical whitening agents possess these quality features:

- ✱ Recommended for pad or mangle application on cotton and rayon fabrics.
- ✱ Work well alone or together with usual finishing ingredients—resins, starches, fillers, softeners, etc.
- ✱ Produce clear, brilliant whites on bleached textiles.
- ✱ Outstanding in their level dyeing properties.
- ✱ Suitable for use in all types of equipment, such as jigs, reel or package machine.



THE POWDER FORM

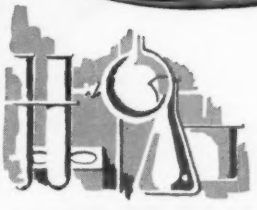
BLANCOPHOR HS-71 and HS-76

THE NEW LIQUID FORM

BLANCOPHOR HS-31

BLANCOPHOR HS-31, the new liquid form, is easy to use—there's no need to dissolve powders.

Write today for more detailed information on the application of liquid form Blancophor HS-31 and powder forms, Blancophor HS-71 and HS-76.



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CAUSTIC SODA
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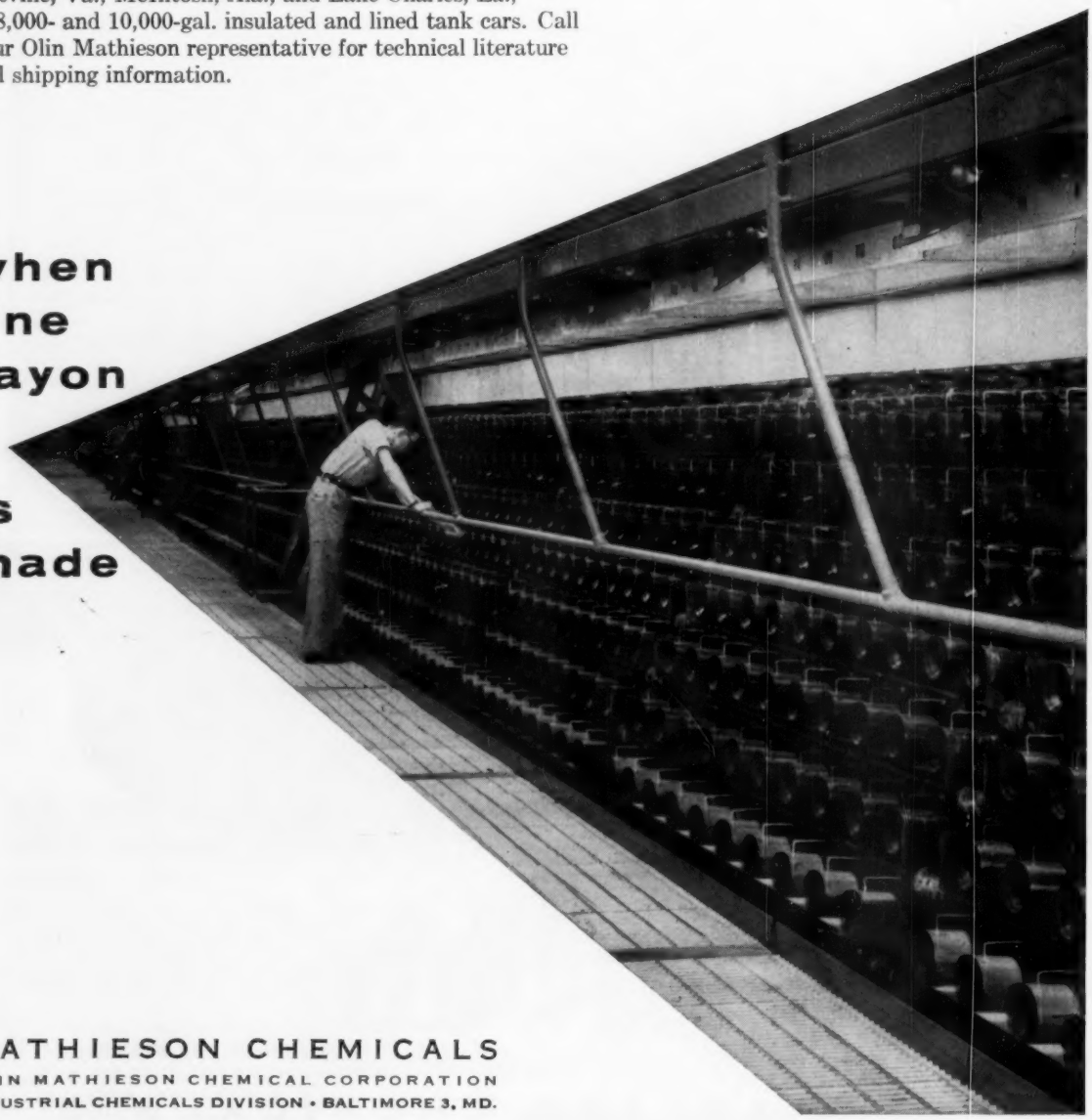
Four plants from the Great Lakes to the Gulf deliver Mathieson Caustic in the quantity and quality specified, shipped on precise schedules to meet your operating requirements.

For rayon, special grades and high purity caustic are available. Caustic shipments come from Niagara Falls, N. Y., Saltville, Va., McIntosh, Ala., and Lake Charles, La., in 8,000- and 10,000-gal. insulated and lined tank cars. Call your Olin Mathieson representative for technical literature and shipping information.

when fine rayon is made



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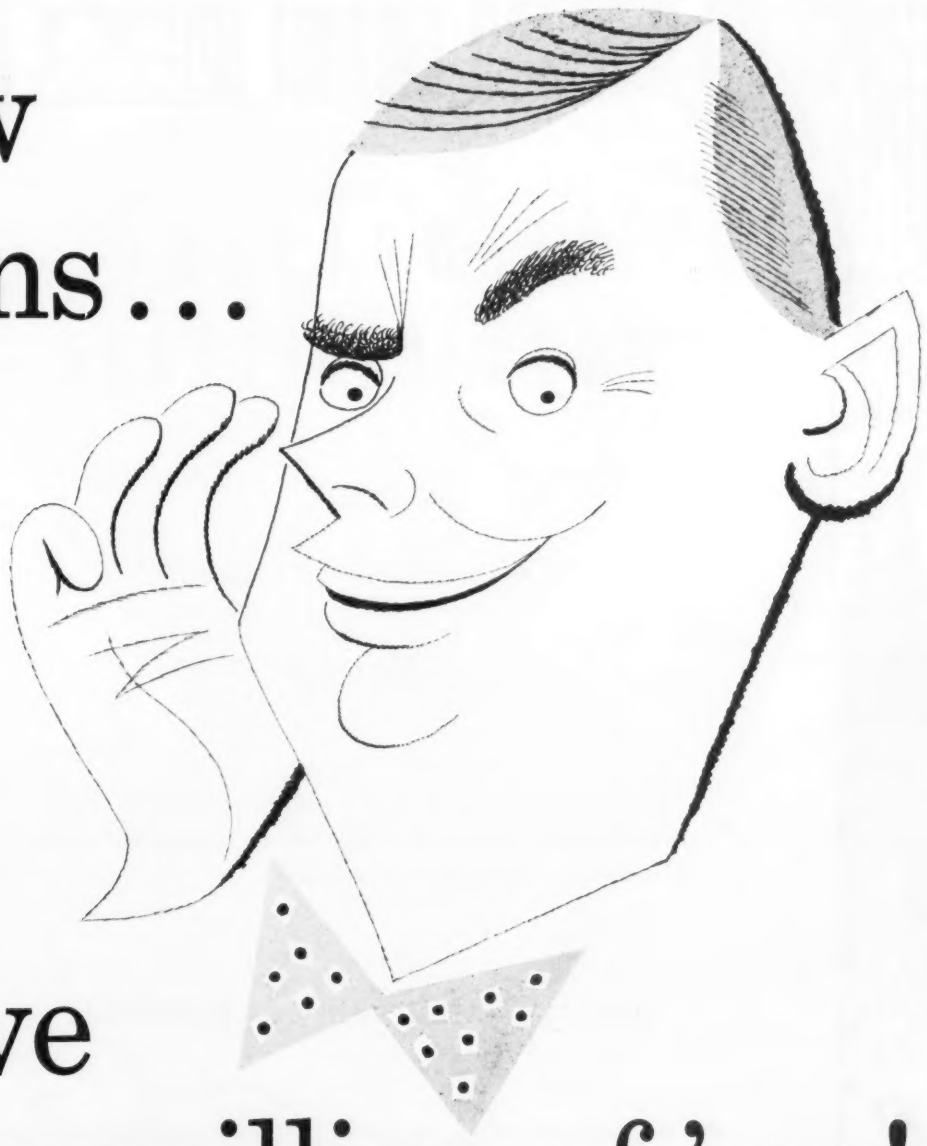
Polyamines • Soda Ash • Sodium Chlorite Products • Sodium Methylate • Sulfate of Alumina • Sulfur (Processed) • Sulfuric Acid

New Yarns . . .



we've got a million of 'em!

Don't stop us if you've heard this one!

Bemberg novelty yarns . . . a bewitching, bewildering, beguiling line-up of 24 different and distinct effects . . . are loaded with profit possibilities.

Cupioni® . . . sensational shantung-type rayon yarn . . . is still proving our point . . . its pace growing hotter all the time . . . sales records falling by the wayside every day. Cupioni is now offered in solution-dyed heavier deniers for the home furnishings field.

Other yarns with phenomenal possibilities include Flaikona†, America's only continuous filament flake yarn; Strata†, an unusual thick-and-thin and Nub-lite†, an intriguing nubby effect. Strata and Cupioni are now offered in solution-dyed Cupracolor.

Blend 'em with cotton, silk, rayon, acetate, or the newer synthetics for brilliant new achievements in style and practical qualities.

Call LExington 2-3520 . . . and let's get started!

Bemberg®
ARISTOCRAT OF RAYON YARN

†Reg. app. for

AMERICAN BEMBERG • Main Office: 261 Fifth Avenue, New York 16, N.Y. • Plant: Elizabethton, Tennessee.

the customer knows about softeners

Until she tries this garment on, she won't know how it fits . . . until she washes it, she won't know whether it will fade or shrink . . . but the minute she *feels* it, she detects immediately whether it has that soft, lofty hand she is looking for. The best way to avoid disappointing her is to insist that Hart softeners be used in your finishing processes.

SYNTHO-SOFTENERS — Non-yellowing substantive softeners for cellulosic and synthetic fibers. Does an excellent job with resin finishes.

SORBITEX — Anionic, completely non-yellowing softener for cotton, woven and knit goods, and cotton napping.

CATYLEX — Cationic, substantive softener for synthetics.

FINISH WS — Nonionic softener and lubricant, especially recommended for napping and scrooping of nylon.

Technical bulletins and complete information will be gladly sent on request.

the Hart Products Corporation

1440 BROADWAY, NEW YORK 18, N. Y.

Works and Laboratories, Jersey City, N. J.

Hart Products Company of Canada, Ltd., Guelph, Ontario

This Du Pont merchandiser sells tons of fiber

Here in Du Pont's Women's Wear Fabric Room, Myra Kelley, a Du Pont merchandising representative, points out to David Schwartz, president of Jonathan Logan, the contributions Du Pont fibers make to the season's newest fabrics.

In these unique combinations of textile libraries and showrooms (there are men's wear and home furnishings fabric rooms, too), over 5,000 samples are catalogued seasonally.

The single purpose of these rooms in the Empire State Building is to tell retailers, cutters and fashion editors the advantages that Du Pont's modern-living fibers are bringing to today's most exciting market fabrics. Here is created an extra trade excitement that makes for better business for Du Pont customers as a whole. With these showrooms off limits to

FROM RAW FIBERS TO RETAIL SALES . . .

but never writes an order

millmen and converters, each exhibiting mill's individual interest is rigorously protected.

Du Pont merchandising representatives have wide contacts at all levels of the trade. They promote new concepts and ideas that stem from Du Pont's modern-living fibers, bring back market reactions that aid in making your Du Pont salesman the best informed in the industry. This helps you and Du Pont anticipate new demands, plan broader markets.

Du Pont believes it can increase the market for its fibers and thus benefit its customers by providing useful assistance to all levels of the textile industry. It's through your Du Pont salesman that you, as a customer, have access to a range of technical and merchandising information unique in the textile undustry.

Product and Process Notes from Du Pont

Color-Sealed Black—Now the rich, clear black of Du Pont's color-sealed nylon yarn is available in 40 denier as well as 70, 100, 200 and 260 denier. Dresswear, blouses, lingerie, sportswear, hosiery and upholstery are a few of the countless applications of these bright BLACK nylon yarns with the color sealed into the fiber.

New Bleaching Method for "Orlon"*— A simple method has been developed for bleaching the new, whiter, more dyeable "Orlon" to an excellent white of improved stability. Bleaching is accomplished by treating the fabric or garments at the boil in a bath containing formic acid and a detergent. Additional whitening can be obtained by application of a fluorescent white dye and a minute amount of blue dye in the same bath.

Improved Packaging—50, 70, 140, 200 and 210 denier nylon yarn is now available on 5-lb. draw-wound tubes. Advantages of this package are elimination of pirn taper barré, more uniform shrinkage—resulting in more uniform dyeing and fabric-width uniformity. Reduction in creel stocking frequency results in labor savings. This package is suitable for broad woven fillings of zero twist yarn, certain bulk and stretch yarns, plied yarns and tape reinforcement.

Technical Information Bulletins—contain detailed, practical information on Du Pont product and process developments. They cover fiber properties, mill processing, dyeing and finishing. Refer to your copies frequently; they can save you time and money. To be sure you have all the bulletins you need, check your Du Pont salesman or Technical Service representative.

*Du Pont's registered trademark for its acrylic fiber.

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BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY

DU PONT BUILDS PROFITS FOR YOU

13 good reasons why "Tergitol" surface active agents and textiles work together

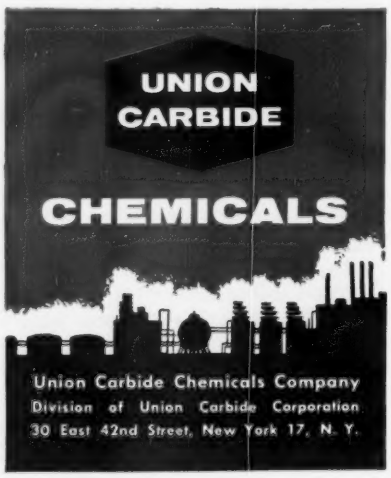
13—that's how many TERGITOL surface active agents you can choose from. This excellent selection includes *eight* nonionics and *five* anionics. So whether you're interested in dyeing, scouring, bleaching, carbonizing, or mercerizing there's a nonionic, anionic, or blend of surfactants to choose from—

TERGITOL Nonionics	*Cloud Point °C.*	*Properties*
NP-14	—	Oil-soluble emulsifier and detergent
NP-27	20	Aromatic-soluble emulsifier and wetting agent
NPX Anhydrous	56-60	General purpose detergent, wetting agent, and emulsifier
NP-35	90-95	Detergent and wetting agent at elevated temperatures or in presence of dissolved salts
NP-40	100	Detergent and wetting agent above 100°C.
TMN	35-37	Outstanding nonionic wetting agent with good leveling rewetting properties
XD	60-65	Outstanding emulsifiers and low-foaming detergents
XH	90-100	

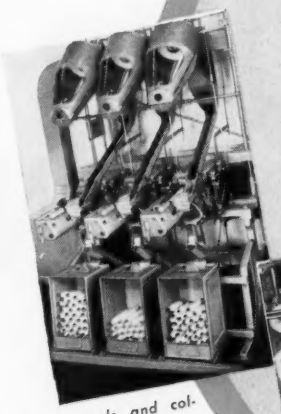
TERGITOL Anionics	*Conditions for Use*
7 and P-28	for dilute solutions of acids, alkalies, and salts.
4	for moderately concentrated solutions of acids, alkalies, and salts.
08 and EH	for concentrated solutions of acids, alkalies, and salts.

"Tergitol" and "Union Carbide" are registered trade-marks of UCC.

For a new 40-page booklet on TERGITOL surface active agents, write—Union Carbide Chemicals Company, 30 East 42nd Street, Department HA, New York 17, New York. In Canada: Carbide Chemicals Company, Division of Union Carbide Canada Limited, Montreal.



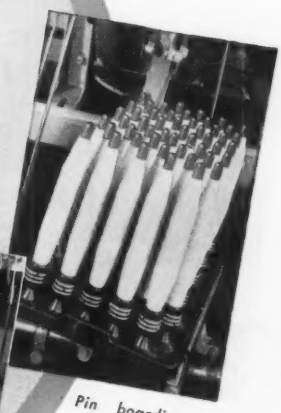
A few of the many types and sizes of filling bobbins that can be profitably run on the Fill-Master Winder.



Exhaust hoods and collectors for mills having dust and fly in winding area.

Multi-cell empty bobbin magazine for magazine creeling or single packages.

Packing device for orderly, clean storage of filled bobbins.



Pin boarding arrangement for synthetic yarns.

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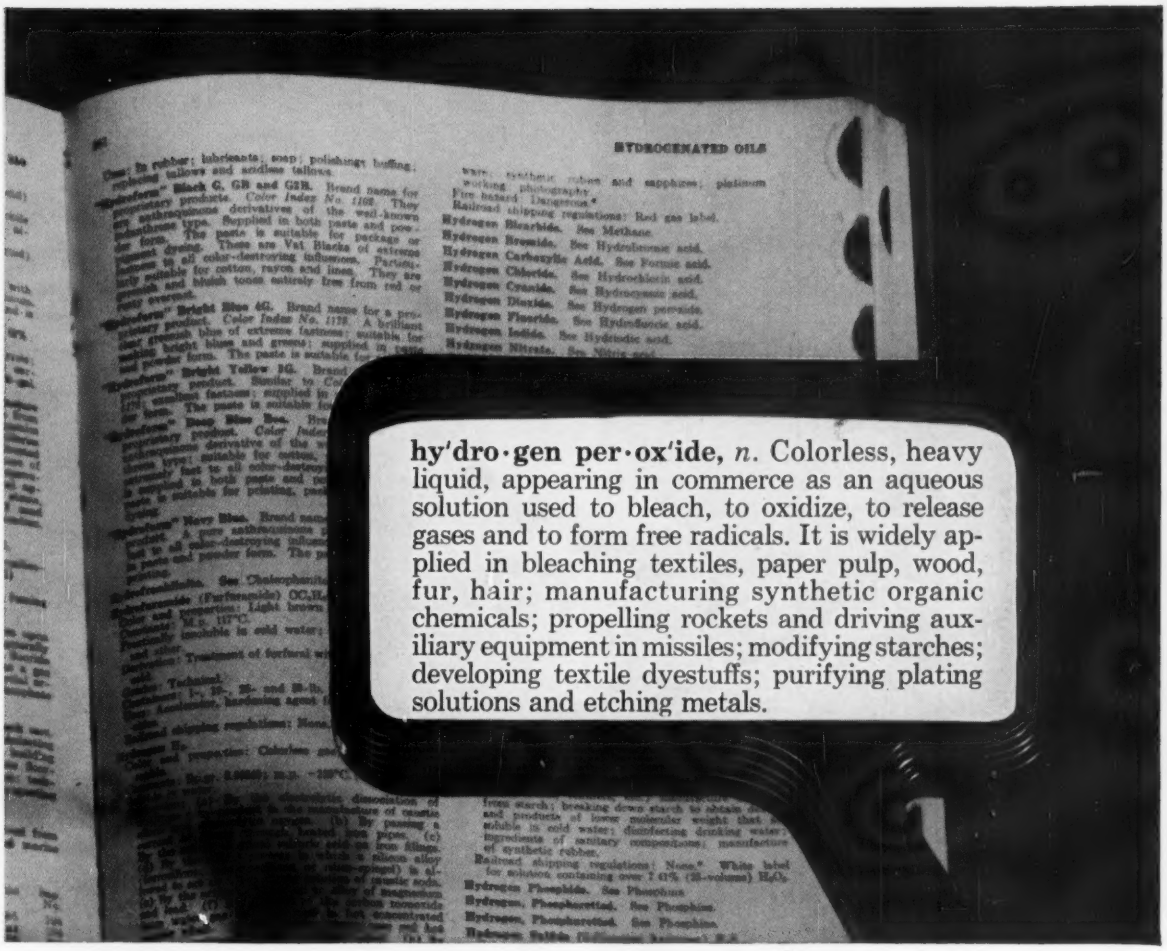

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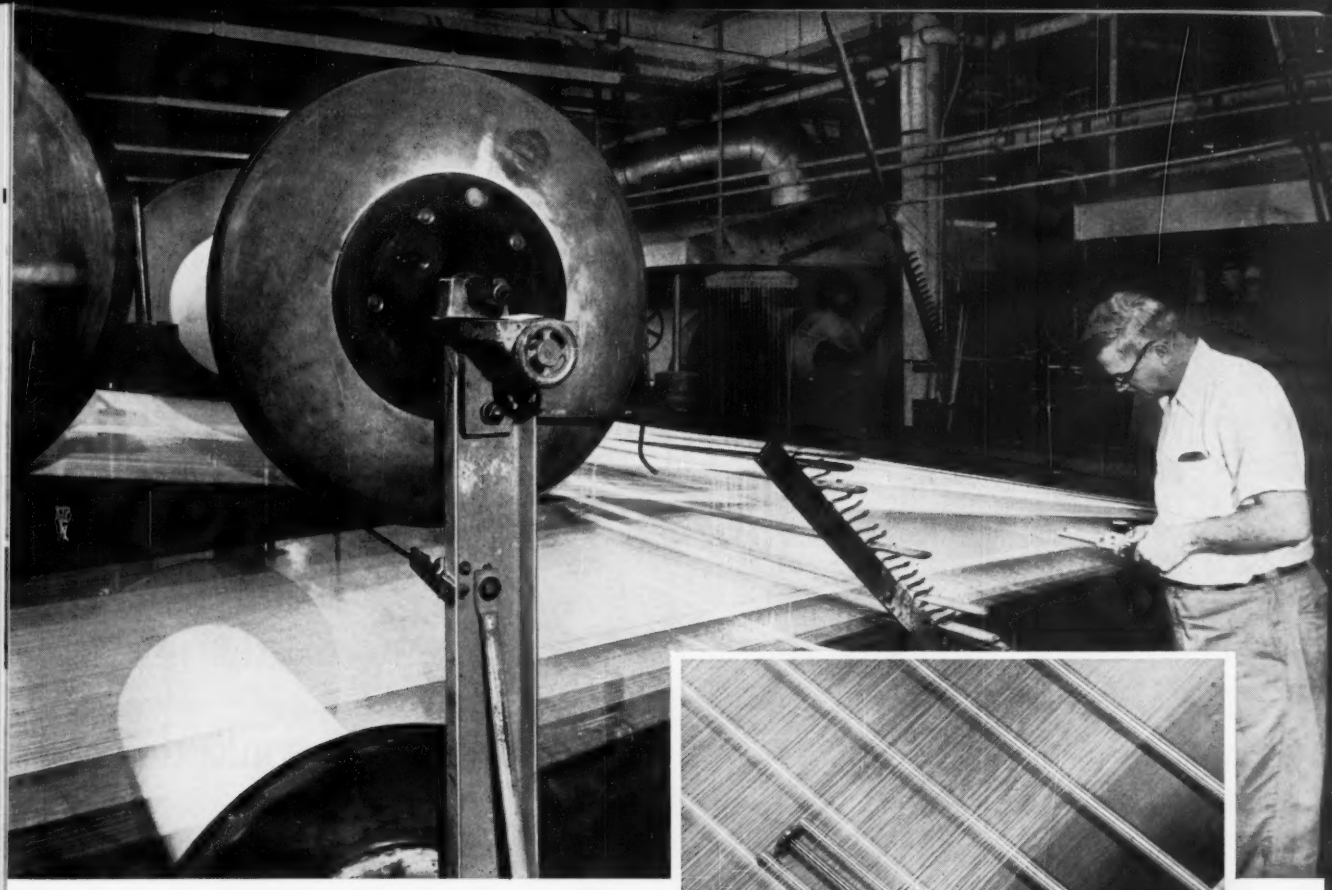

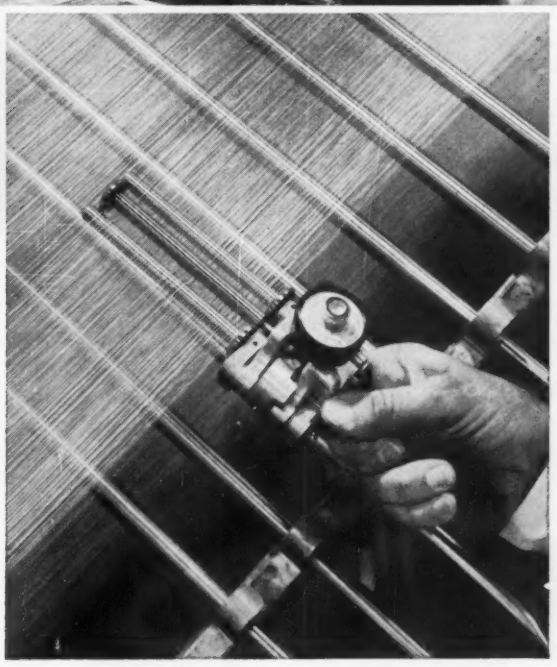

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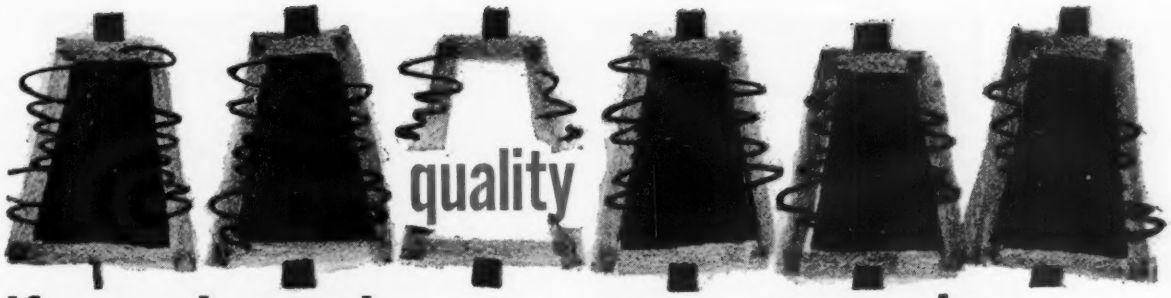
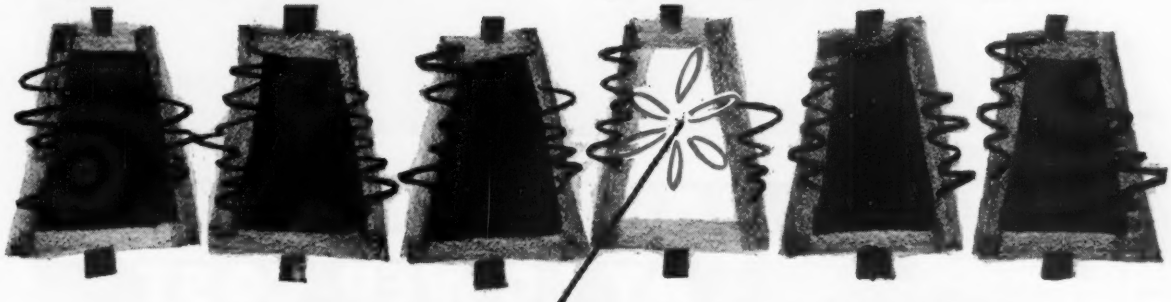


if you demand ^ yarn processing...



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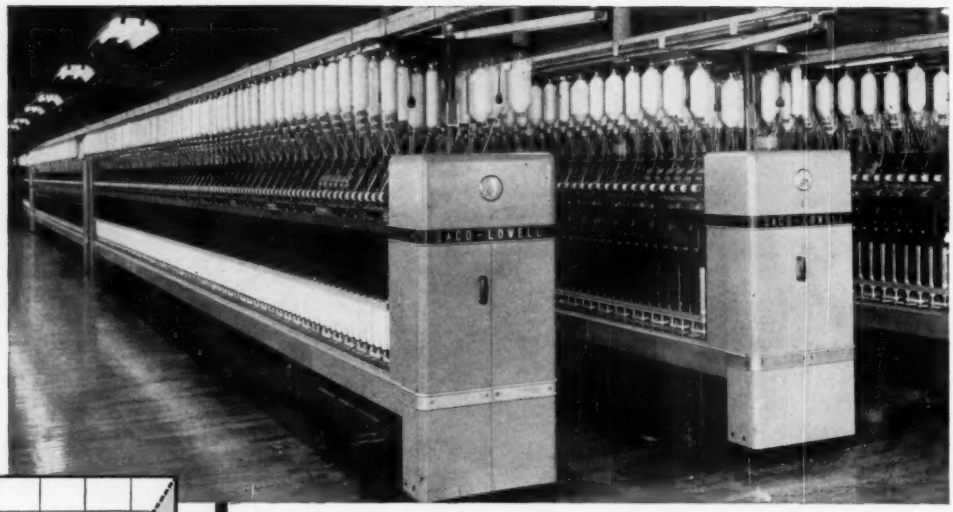

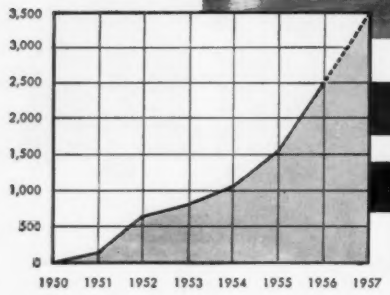

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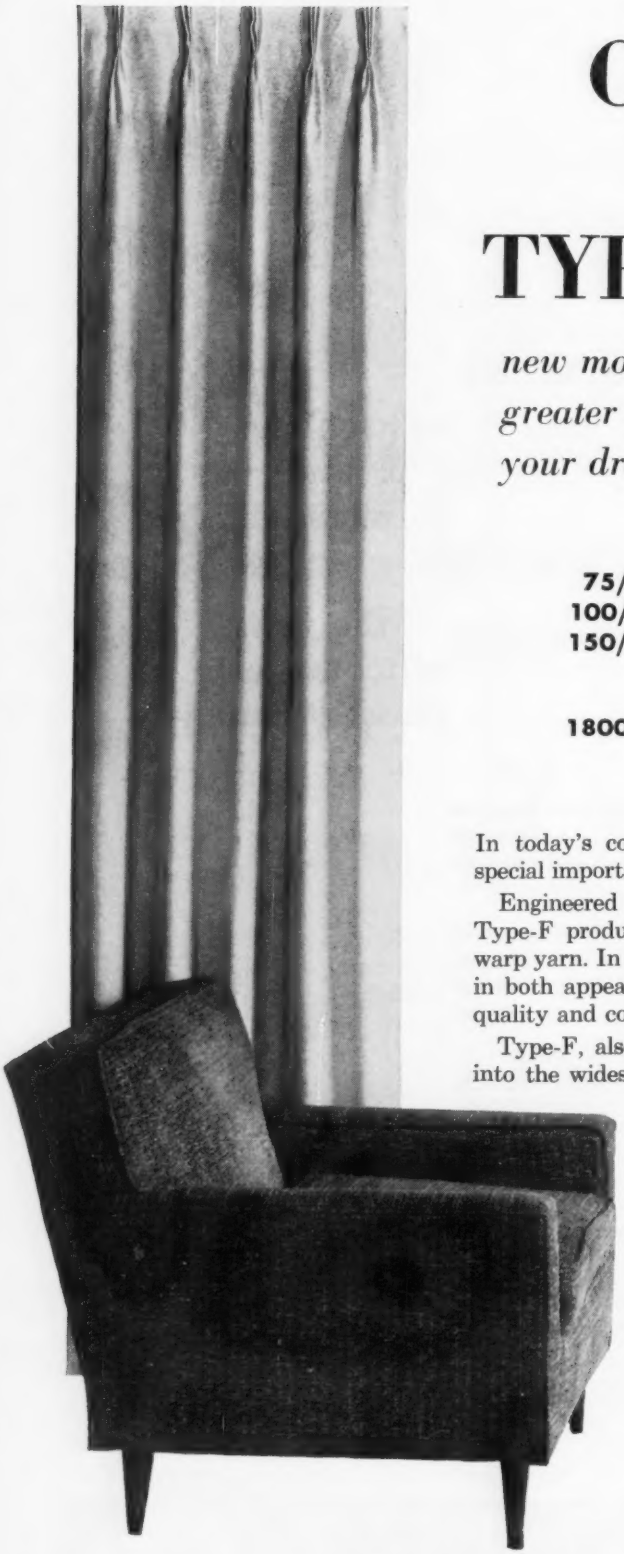

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MODERN
TEXTILES MAGAZINE

October 1957
Volume 38 Number 10

Publisher's Viewpoint

While the Man-Made Fiber Industry Sleeps

Much to the surprise and belated indignation of many in the textile industry, the House of Representatives passed on August 15, H. R. 469, a bill that requires textile products containing cotton and man-made fibers to be labeled to state fiber content.

Thus this bill, which has been vigorously opposed by spokesman for many sections of the textile industry including mills and garment manufacturers as well as drycleaning and laundering trade associations, has taken a big step toward enactment into law. It now goes to the Senate for consideration. Due to the fact that Congress is adjourned until the first week in January, there is left another opportunity for the textile industry to stop the passage of this proposed law.

Why should H. R. 469 be stopped? As pointed out on this page in our August issue, the bill, if enacted into law, would do no good for anyone, least of all the consumer for whose benefit it is ostensibly proposed. It would simply burden the industry with the need to keep records and to supply tags and labels which, although an added expense, would serve no useful purpose.

If H. R. 469 serves no useful purpose, why has it been passed by the House of Representatives?

Some light on the forces behind the bill is shed by a statement of the House Commerce Committee which recommended its passage. According to the committee, the bill "would protect consumers and help the American farmer whose fiber products must compete with deceptively labeled and advertised synthetics that are lower priced and often of inferior quality."

Let us remember that the American farmer produces two important fiber products—cotton and wool. Since wool labeling is taken care of by the Wool Products Labeling Act, the only other "fiber product" which the legislators wish to protect against "deceptively labeled synthetics" must be cotton. It is thus reasonable to assume that the forces which have impelled the House of Representatives to so speedily pass H. R. 469 are those which believe that cotton will benefit from the bill if it is enacted into law.

If fabrics must be labeled as to fiber content, the friends of cotton apparently believe that consumers will choose cotton garments over those containing man-made fibers.

Here then halfway on its road to enactment is a bill which is intended by its sponsors as a blow at man-made fibers and the fabrics made with them. In the face of this attack, it is a sad fact that no organization speaking on behalf of the producers of man-made fibers or the mills that process them has made known its opposition to the bill. Up to this point the fight against H. R. 469, has been carried on by the Joint Committee on Labeling of Textiles and Apparel most of whose members are trade associations of garment manufacturers.

Here then is an opportunity for vigorous action by the American Cotton Manufacturers Institute, newly joined with the National Federation of Textiles, which, until the merger, had been the spokesman for mills handling man-made fibers. ACMI can demonstrate its impartial devotion to the interests of all its members, including mills that handle man-made fibers, by speaking out vigorously against H. R. 469.

A. H. McCullough

PUBLISHER

OUTLOOK IN TEXTILE MARKETING

By ROBERT C. SHOOK, Textile Economist

Some light on the paradox of good retail sales while business falters for mills and converters

During most of this year, textile-apparel sales at the retail level have shown gains in line with income. Most cutters, converters and mills, on the other hand, describe business as slow and unsatisfactory.

Two factors help to explain this situation. One is the further reduction in overall textile-apparel inventories which has probably taken place. This has not been large, for inventories at the beginning of this year were not excessive. It has been enough, however, to keep many forms of textile activity below the levels justified by unit sales at the retail level.

The other factor is more elusive, but no less important and has to do with the attitudes and operating policies of retailers, likely to be maintained through the year and into 1958. A summary of what they are may be of some interest and value.

Retailers Not Worried About Supplies—The retailer sums up the supply situation by saying that there are no shortages of anything. Deliveries are quick for practically all items of department store merchandise.

Are there lost sales of seasonal fashion merchandise, because stocks have been too low? Probably. But having too few wanted items is one of the normal risks of fashion merchandising. The other is to have too many unwanted items. The average retailer will deliberately accept the first risk in order to avoid the second.

Nor Do They Fear Price Advances—Retailers know that costs in many cases are rising. They expect that there may be some price advances for some types of merchandise. But not many and not big ones. And their buying is designed to protect a high rate of inventory turn-over, rather than to anticipate price increases.

Conversely, retailers don't expect important price declines for any major class of department store merchandise. But there are no shortages, and when supplies are ample a seller here or there will get into trouble, sooner or later, and have to take a loss on stock in order to convert it into more liquid form. Even with sustained production costs, most retailers expect to find good buys of this sort from time-to-time, and will look for them actively.

Inventories Purposely Kept Low—The rule is to keep a minimum inventory, in terms of necessary sizes, colors and styles. If in doubt, be a little short rather than a little long.

Use of Store Purchasing Power—The rule here is to keep a larger portion of total buying power uncommitted than was the case last year. This has caused a lag in new orders received by manufacturers. However, open-to-buy, or the amount remaining to be spent, is greater than a year ago.

Consumer buying—The consumer will buy, but is very choosy and inclined to shop around. Especially good values ring up substantial sales, but ordinary values move slowly.

Trading up—Consumers in many cases are willing to pay more for better quality items. But they want to be sure the quality is there. Unfortunately, in most textile-apparel items, the consumer has nothing to guide her. She can't be sure one item is better than another, and is inclined to buy the cheaper one. If the textile-apparel industry had recognized quality standard, to guide the consumer, the retailer could sell much more better quality, and higher priced merchandise.

Significance to Mills and Cutters—What this implies for fabric and garment producers is a continuation of present trends. New orders will lag somewhat behind the usual seasonal trend. Mill production schedules will have to be kept in gear with near-term demands, since buyers will be quick to take advantage of any visible accumulation of inventories.

(Continued on Page 53)

Dr. Shook is vice president and research director, A. W. Zelomek Associates, Inc., 350 Fifth Ave., New York City.

TWO FRIENDS MEET—John M. Reeves (left) greets the late Admiral Richard E. Byrd at the centennial celebration of Eagle & Phenix Mills division of Reeves Brothers in Columbus, Ga. One of Reeves most successful fabrics has been "Byrd Cloth", a durable, wind-resistant cloth developed for Admiral Byrd's Antarctic expeditions.

John M. Reeves gave up teaching to build a successful textile business. In his years on Worth Street, he has taught the textile industry, by object example, the value of fair dealing, open friendliness, faith in fine fabrics and durable optimism

Schoolmaster on Worth Street

By Jerome Campbell
EDITOR, MODERN TEXTILES MAGAZINE

IN THE YEAR 1913 the citizens of Dothan, Alabama (pop. 10,000) were happy in the realization that they had a fine young man as principal of their high school. The young man, who had been with them several years, was an excellent administrator who knew how to manage the school's pupils and 15 teachers with a firm yet gentle hand.

Although only 26, Dothan's high school principal was well qualified for his job. He was a graduate of the University of North Carolina, and had taken special summer courses at the University of Chicago. Before coming to Dothan two years earlier, he had gained experience as a teacher at the high school in Dobson, N. C. All in all, the young high school principal, by name John Mercer Reeves, had many reasons for looking forward to a satisfactory career as an educator, for advancement to perhaps bigger schools or even to a university, and for gradual increases in his then not unsatisfactory salary of $100 a month.

There were, however, important forces working to pull young Reeves out of the field of education into the textile business. Richard Early Reeves, a brother 12 years older, was one of the key men in Hunter Manufacturing Co., a successful producer of cotton fabrics and a sales agent for a large number of Southern mills. Another older brother, Micajah Rufus (Mike) Reeves was also doing well with Hunter.

It so happened that family feeling was extraordinarily strong among the Reeves brothers and it

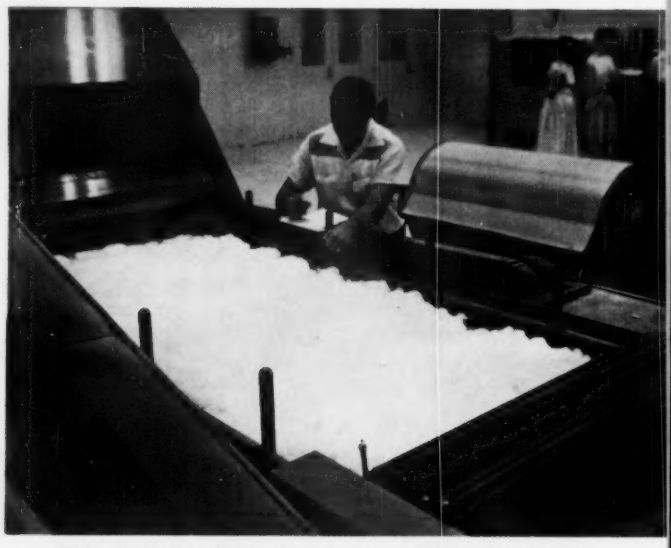
(Continued on Page 57)

New tool

THE DEVELOPMENT of a body of practical knowledge for millmen in the specific area of caprolactam nylon (nylon 6) has taken a big step forward with the opening by Allied Chemical & Dye Corp. of a new application laboratory exclusively devoted to this purpose.

The new laboratory is in Chesterfield, Va., alongside Allied's new nylon plant. It is equipped with a full range of textile mill machinery, including tufting and texturizing equipment.

Practical know-how for economic production and for dyeing and finishing of fabrics made with Allied's "Caprolan" nylon will be the broad function of the new lab. Work with their new nylon has convinced Allied people that its properties are distinctly different in many important ways from nylon 6, 6, the original nylon introduced by Du Pont and now manufactured by Chemstrand as well.



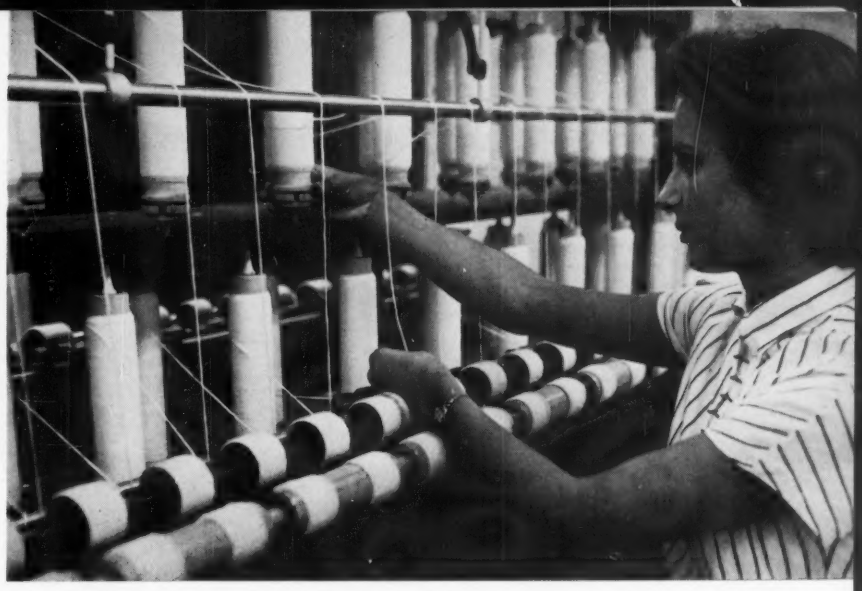
FROM FIBER TO FABRIC—How Caprolan, Allied's nylon fiber, behaves in every step of the textile manufacturing process, is scrutinized carefully. Here staple fiber passes through a picker on its way to becoming spun yarn.

ADVANCED WORK IN TEXTURIZING—Technicians at Allied's new laboratory are especially interested in exploring the possibilities of new fabric effects achieved by "texturizing" filament yarns to give them new and desirable properties. Studies are carried out in bulking Caprolan filament yarns by crimping, coiling, looping and curling.

Development work with Caprolan, Allied's technicians have found, reveals that their fiber reacts differently in the basic processes of fabric manufacture. Skills acquired and techniques developed over the years for handling nylon 6, 6, it was first thought, would be applicable for handling Caprolan in the mill. Experience, however, soon revealed that Caprolan, not being the same as nylon 6, 6, presented end use properties and advantages which could not be utilized in an optimum manner by application of

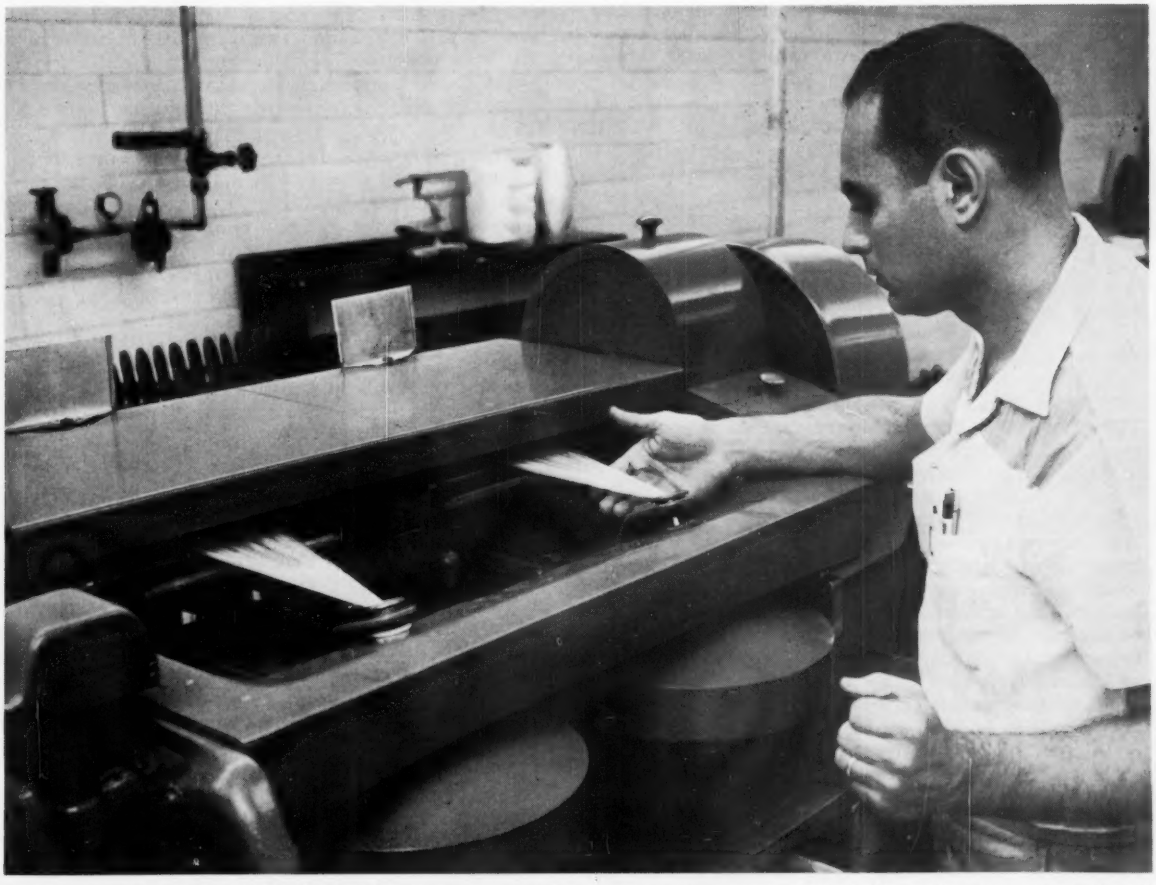
methods worked out for the older nylon. In dyeing, for example, Caprolan's greater receptivity of dyes requires different dyeing methods than those successful with the earlier type of nylon.

Under the supervision of textile veteran William E. Jennings, the staff of the new laboratory, working closely with mills using Caprolan, will carry out fabric development and fiber processing work aimed at making the most of Caprolan's distinctive properties. Their overall aim will be to stimulate the thinking and help bring out new originality among fabric development people and textile engineers. ■



IMPROVEMENTS IN SPINNING SOUGHT—The crucial function of spinning Caprolan polyamide fibers into yarns is under constant study at Allied's application laboratory.

for mill progress



MILL CONDITIONS REPRODUCED—At the laboratory, the most modern textile machinery, such as this drafting unit, are operated under mill conditions to yield Caprolan yarn processing data of practical value to mill managements.

Here's how you can improve your mill costing

By John Drury

A good costing system, says this seasoned CPA, should be free from unnecessary complexity, flexible, currant and able to be tested accurately

As a certified public accountant, my interest in cost systems centers around two things: (1) verification of inventory pricing and (2) explanation of results. In the course of my work I have come across a great many different systems of costing, some better than others and some common errors or omissions that I have encountered.

First of all is the mill with no cost system at all. This used to be quite common among smaller textile mills, often where the mill owner was a competent operating man. I have often heard the remark "Hell, I know what my mill is doing, I don't need a gang of figure men to tell me."

To illustrate how this no-system-at-all works I will take one of my erstwhile clients who operated a cotton mill making grey cloth. The owner accumulated mill operating costs every month. These he divided by the number of pounds of cloth produced. He thus came up with a cost per pound. He then took the average number of yards per pound and computed a cost per yard. Next he multiplied this cost per yard times the yardage sold and subtracted this figure from his sales. If the remainder was enough to cover selling and administration costs and leave something over for profit he was happy.

This system worked fairly well as long as he continued to manufacture grey goods and so long as his styles were fairly uniform. However the business started to expand. The mill was soon engaged in selling both grey and finished goods in a wide range of styles and colors. It was then that trouble started. In the first place, our accountants' results as shown by audit and the results arrived at by the owner were seldom in agreement. It was practically impossible to reconcile the two figures.

In the second place, as competition grew keener, the salesmen were in the unhappy position of not knowing which prices could be shaded a bit in order to get an order and which prices were absolute rock bottom. The crowning achievement was the taking of a large government order at a price which was below total cost but which presumably was to "absorb some overhead" and thus enable the mill to produce other goods cheaper.

Unfortunately the size of the government order precluded any substantial production in other styles. After the mill closed down I asked the owner if he didn't think a cost system might have helped him. He replied "Hell, I don't need any figure men to tell me how a mill is running". This is an extreme illustration but it is not unusual. It is truly amazing how many mill operators run their mills by the seat of their pants.

At the other extreme from the error of no-system is the error of too much system. This is the case where an integrated and highly complex system is installed in a small or medium sized mill. Quite frequently the story goes like this: Mr X has been operating a very successful mill, but he feels it is time to get a little business psychoanalysis; he calls in outside experts.

The first thing he gets is an appraisal of his management, then his pay scale is given a thorough going over and he is told that his manufacturing procedures are all wrong. Finally they get to cost and production controls. The owner hires some time study men, sets up a production control department, an inventory control department and a cost department, all under the guidance of his experts. He gets inventory position reports, production reports, production forecasts, material variance reports, labor variance reports, burden absorption reports and so on.

The systems which have been installed may be perfectly adequate systems but they are much too large, complex and expensive for the operation they are supposed to control. Finally, the time comes when the experts tell Mr. X he now has an operating system and no longer needs the experts. The first thing that happens after the experts leave is that Mr. X discovers that no one fully understands his system or the reports it produces. For this reason he feels that the cost of preparing these reports is exorbitant. Finally he discovers that by the time he gets information from his system it is so late as to be almost useless.

So after spending a lot of money and time, our manufacturer ends up with an inadequate cost set-up or else he discards the whole system and ends up with nothing.

Now let us assume that a mill has navigated safely between no system and too much system and that it has a system which is adequate for its needs. I have seen many wholly adequate systems spoiled by being put in charge of untrained personnel. A cost system is not something that is installed and then left to run itself. It must be carefully tended and should be in charge of a person who is familiar with the system and also with plant operations.

With constant technological improvements becoming available and with shifts in selling emphasis between styles, it becomes vital that the cost man be competent to translate these changes into dollars and cents. Further, a good cost man should be able to keep a mill's system flexible enough so that changes

(Continued on Page 54)

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REPORT FROM EUROPE

BY SPECIAL CORRESPONDENT

Overproduction threatens future of British synthetics; Germans expect "common market" will help their sales

LONDON—Britain's expanding man-made fibers industry faces a tough competitive battle ahead regardless of how speedily the European "Common Market" becomes effective. This is the gist of a recent report by Aubrey C. Walters, director of the British Man-Made Fibers Federation.

Free trade under the "common market," Walters told the group's conference held at Oxford, cannot become effective for 10 to 15 years. Long before then, however, the combination of rising output and shrinking exports will pose a tough nut for the man-made fiber trade to crack. In 1948 exports were 154 million square yards, and production 232 million pounds of yarn. In 1956, exports were only 130 million square yards, while output more than doubled to 483 million pounds.

Several Remedies Offered—Walters listed several remedies which he urged be acted on quickly. These were (1) more speed in making style changes; (2) greater vertical cooperation among mill men, finishers and wholesalers; (3) some coordination of production, and (4) specially planned production at negotiated prices for some markets—but only where necessary.

Biggest Problem Remains—Another paper presented at the Oxford meeting—this one by George Waggett, spinning manager of Arrow Mill, Courtaulds, Ltd.—actually posed the real problem facing not only Britain's man-made fiber makers but all British industry as well. Waggett first noted that, as 100% constructions are being replaced by blends, present spinning machinery has become inadequate.

Here is the way Waggett put it: "We have found for the first time that we have no machinery which will make blends that can be guaranteed from one day to another. The biggest single weakness is the lack of adequate blending machinery." And then he went on to say that there was an American machine deemed satisfactory. However, it cost $28,000 "and unskilled labor was replaced by a number of skilled people who were forever checking actual blends." This fear—though, perhaps justified—of displacing labor is something U. K. manufacturers will have to get over more readily if they are to compete successfully.

Germany Girds for Future—A large percentage of German man-made fiber producers is actually looking forward to competition expected to stem from the "common market." They foresee stiff competition from the Netherlands and Italy—and to a certain extent from France. But they believe this will exert a downward pressure on prices generally. They feel they will be able to meet this internal competition and also penetrate new foreign markets as a consequence of lower prices in Europe.

Acid-Resistant Yarn—A Rhine man-made fiber manufacturer, Dynamit A. G. Troisdorf, has come up with a low pressure polyethylene filament to be marketed under the name of Trofil. It is said to be resistant to acids and alkalis, with an unusually low specific gravity but a tensile strength of steel. Speaking of steel, German steel manufacturers have started to use cylindrical brushes made of perlon to wash steel plates emerging from their bath of acid. The brushes must withstand a temperature of 80 to 90°C.

New German Nylon Plant—Vereinigte Glanzstoff Fabriken A. G., at Wuppertal just outside Frankfort, is building a new nylon plant slated for production in the Spring. It will start off at 15,000 pounds a day, but will have big expansion possibilities. The nylon will be used for industrial purposes such as tire cord, belts and nets. A growing demand for these uses is expected from Portugal and the Scandanavian countries as well as from Germany. Some German processors are treating perlon fiber with vaporized gold, silver and chromium in a way that is said not to affect its porosity or "hand."

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Take a Look at How Caprolan Responds to Four Popular Bulking Processes!

The left-hand skein is simply 60 yards of our 2100-112-0-0-HB heavy yarn which *has not* been texturized by *any* method. To its right are four skeins of the same weight of the same yarn bulked by looping, curling and two methods of crimping.

These texturized yarns of Caprolan tell their own story!

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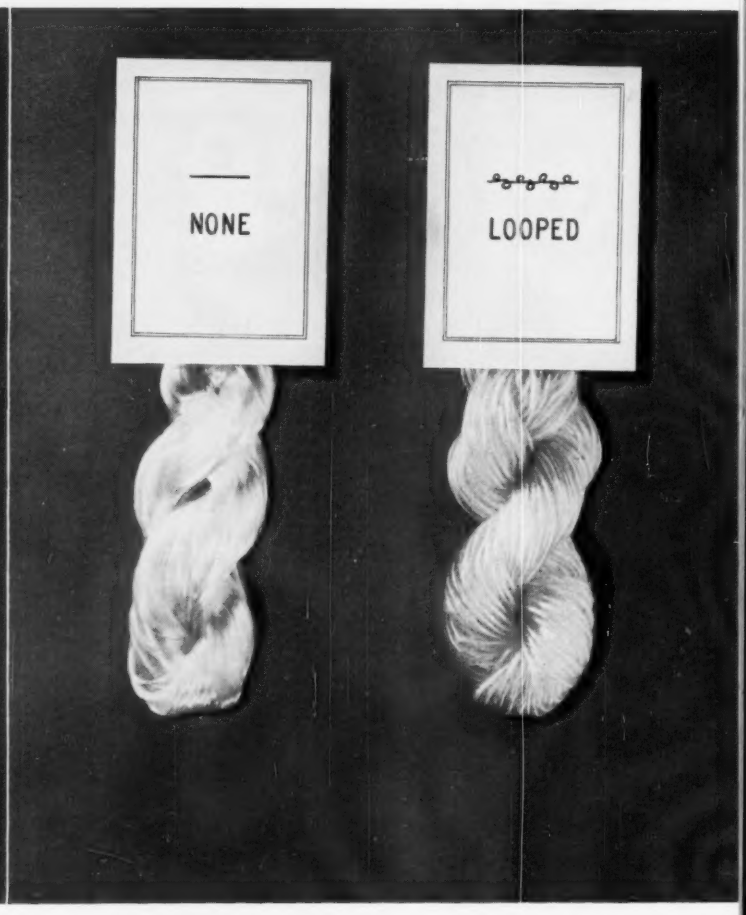

60 yards of Caprolan 2100-112-0-0-HB heavy yarn which has *not* been texturized.

Same weight, same yarn texturized by *looping*.

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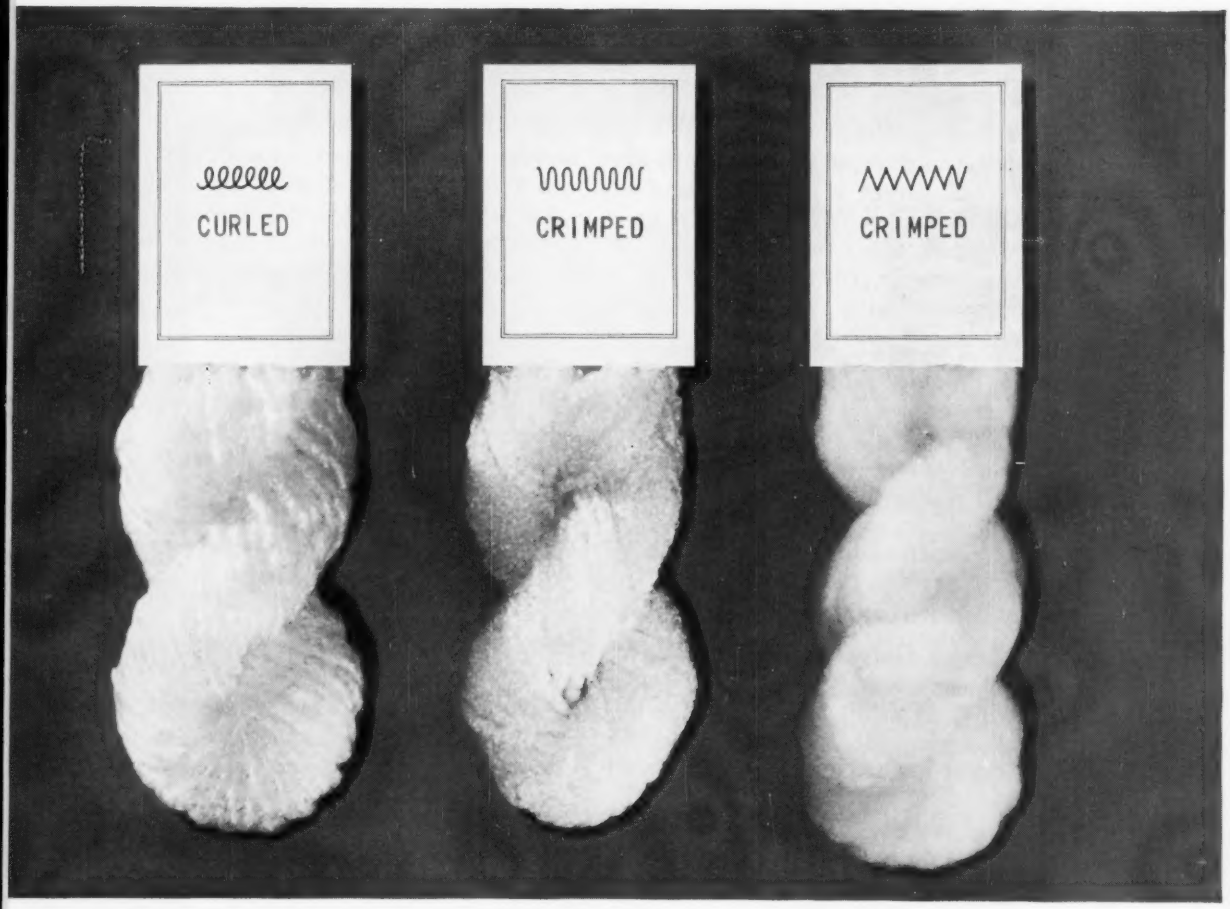

Same weight, same yarn texturized by *curling.*

Same weight, same yarn *crimped* by one process.

Same weight, same yarn *crimped* by second method.

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REPORT FROM JAPAN

Cotton exporters want more flexible quota system

By B. Mori

OSAKA—Japanese exporters of cotton fabrics and finished textile products are hoping for important revisions in export quotas to U. S.—revisions not so much in quantity of goods which may be shipped, but in manner in which the quota is broken down by products and by shippers.

A quota system which, in effect, predicts what may be shipped to the U. S. a year in advance, in the Japanese view, is useless. It is based on past experience; and the past, in export trade, the Japanese argue, is no guarantee of what the U. S. market will want, or what demand trends will permit the U. S. market to buy in the future. Similarly, it is demonstrably unfair, the Japanese say, to assign a quota for future business on the basis of individual exporters' past experience. The new, upcoming and enterprising exporter is prevented from competing in the market with new ideas and new styles. The result is a sort of frozen vested interest for established exporters.

More Workable Quotas Sought—It is probable that evasion of the quotas by trans-shipping goods via Europe and other places results not from an industry-wide attempt to sabotage the quotas, but rather from efforts of individual shippers to sell goods for which they do not have individual quotas—at a time when the nation's total quota is far from filled! This is a paradox, and it is costly to both Japan and to legitimate importers .

Because these are such active topics of conversation here, it is likely that the talks between American and Japanese interests on revision of the quota scheme for 1958 will revolve around the question of flexibility of quotas and adjustments within the totals, rather than on any change in total quantities of goods to be shipped.

Rayon Staple Output Curtailed—Production figures for the first half of 1957 make it apparent that Japan's rayon staple industry has taken its curtailment program seriously. Figures for the first six months were almost ten% below the same period of 1956. Filament viscose yarn production was down a bit from the postwar highs reached earlier. All other man-made fibers and yarns showed gains: high-tenacity yarn, acetate and synthetics in total were up roughly 50%.

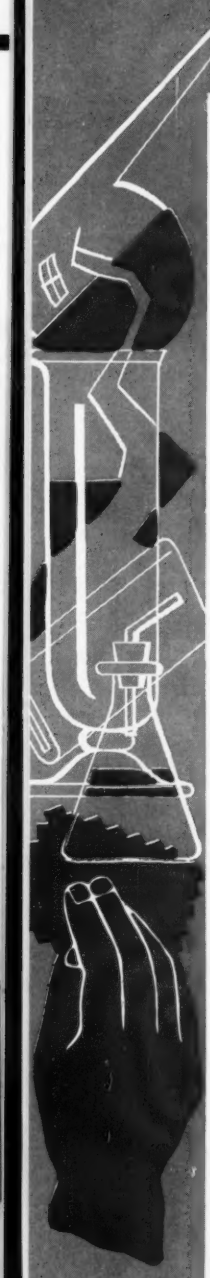
The export picture continued healthy, with shipments of spun rayon fabrics almost one-third larger than first half of 1956. In the total picture for man-made fibers and fabrics, only filament rayon cloth showed losses, much more than offset by gains in other categories.

Doupioni Silk Prices Sag—Contrary to all expectations, doupioni silk prices dropped below the "support price" for several weeks, causing much confusion and uneasiness among buyers abroad. The reelers of this silk are in the midst of an effort to force prices upward by curtailing production 30% limiting quantity of this silk which may be offered for export.

Wool Output Curtailment Extended—Wool spinners and weavers have agreed to continue their production curtailment program for another three months, starting October 1. Import of raw wool was reduced more than 25% for the first fiscal half-year (April-September) by the Government.

Production of rayon pulp in Japan was 202,000 metric tons in the first half of this year and imports were 68,000 tons. In the same 1956 period, production was 170,000 tons and imports 48,000 tons. . .Production of domestic dyestuffs was 11,600 tons in the first six months, compared with 10,900 tons in the 1956 period.

DYEING and FINISHING SECTION



BLEACHING
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WOOL AND MAN-MADES go well together

By J. B. Goldberg
TEXTILE CONSULTANT

Virtually all the synthetics can be blended with wool to make attractive fabrics at economic cost

IN EVALUATING THE POSSIBILITIES which exist for the use of man-made fibers with wool, let us first consider rayon. In spite of all efforts, sometimes convincing, to convey to both manufacturers and consumers the thought that rayon is an inferior fiber and is at best an adulterant when used in blends with wool, this is inaccurate and unrealistic. Unfortunately fabric consumers and manufacturers in this country are suffering from what might be termed "Rayonphobia". There is no question about the fact that if mill and consumer prejudices were overcome, millions of yards of attractive, serviceable and more economical wool and rayon apparel fabrics could be made and sold in this country, at the same time extending the limited supply of costly fine wools. Such fabrics have been marketed here, and if it were not for the Wool Products Labeling Act and the inference that rayon is decidedly inferior in every respect, American consumers as well as mills could benefit by making and using more wool and rayon blends.

In England and on the continent, considerable amounts of blends of this type are finding ready acceptance. In some instances it has been established that certain constructions equal or surpass the all-wool counterparts while being offered at lower prices. For example, in England fabrics of 30% solution-dyed black rayon and 70% 64's wool in serge weaves, ranging in weight from about 18 oz. to 30 oz. per yard, are being used in clothing worn by policemen, firemen and postmen. One construction was wear-tested by the London Metropolitan police for about two years and has now been accepted for their future requirements. Another has been approved for use by the Edinburgh police and a third is now used exclusively for administrative and inspective grades in the Post Office Department.

Also, in England, blankets containing high percentages of rayon have been in extensive commercial production for some time. Special constructions developed for hospital use have been found to withstand 20 launderings with a number of steam sterilizations without yellowing or shrinking to the same extent as their all-wool counterparts.

Commercial men's socks are being knitted of 50% rayon and 50% wool. The British Army has accepted a shirting made with 40% rayon or acetate staple blended with wool, and the armed forces have also accepted 50/50 rayon wool blends for underwear. In Belgium I recently saw women's wear composed of 50% crimped rayon with wool that would be extremely difficult to distinguish from 100% wool constructions in either hand or appearance. In that country, too, there is little resistance to the purchase of rayon-wool blends as long as the consumer is satisfied with fabric performance.

Contrary to popular belief, the presence of rayon in blends with wool does not seriously affect the crease recovery angle of woven fabrics. A study of Navy melton weave fabrics made by the Fabric Research Laboratories some time ago disclosed that a blend containing 28% of rayon had almost as good a crease-recovery angle as the 100% wool control. Also, observations made by English investigators in 1950 indicated that the incorporation of up to 50% of rayon did not seriously alter crease-resistance.

Nylon in Wool Blends

Nylon staple has become firmly entrenched in the textile field as a fiber which possesses and contributes to blends exceptional resistance to abrasion or wear. In blends with wool it has been established that nylon is somewhat more effective than either rayon or cotton in reducing shrinkage in laundering, probably because of its greater hydrophobicity. However, since it has been demonstrated that the percentage required to attain any great degree of dimensional stability is quite high, this is not one of the recommended uses for the polyamide fibers.

The compatibility of nylon with wool in blends to yield higher strength yarns is outstanding. One of the most successful uses for nylon today is to increase the spin limits of woolen or worsted yarns by the incorporation of relatively small percentages of this polyamide. It has been determined that for each 1% of nylon staple added to a blend there will be a 3% increase in yarn strength. In most instances spinning twist can be reduced, increasing productivity.

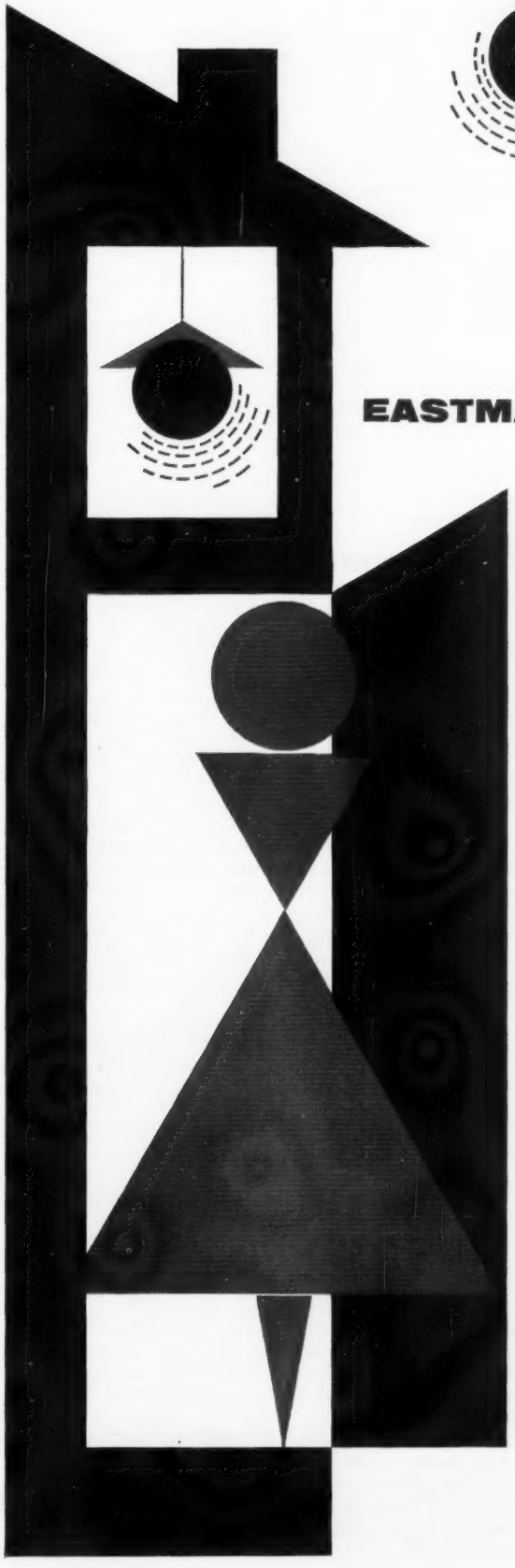
Where it is desired to retain the notable hand and appearance afforded by wool and at the same time increase the yarn and fabric strength and resistance to wear, the addition of nylon is most effective. In contrast to the antipathy for the word "rayon", nylon has always enjoyed high consumer respect, so that the disclosure of a small percentage of nylon in wool-blend fabrics has never been a serious handicap.

The use of nylon in wool hosiery is almost imperative if one wants to insure against premature wear in areas subjected to considerable rubbing, especially in the toe and heel. Although we are limiting this discourse to apparel types of wool, it should be noted that recent studies have proven most convincingly the tremendous increase in wear and crush-resistance imparted to carpeting by the addition of varying percentages of heavy denier nylon staple.

Vicara and Wool

Vicara has always had to rely to a great extent upon the support of other man-made or the natural fibers for strength. Nevertheless, it has been combined with wool of average quality to provide an

Based on a paper presented at a textile seminar conducted jointly by the National Association of Wool Manufacturers and the Philadelphia Textile Institute.



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indoors and out

EASTMAN POLYESTER BLUE 3RL

New Eastman Dye Does Not Flare Red Under Artificial Light

Seldom has a new dye had such rapid trade acceptance as Eastman's Polyester Blue 3RL. And with good reason. Polyester fabrics and their blends dyed with this truly outstanding blue dye *do not flare red under artificial light.*

Moreover, this Eastman polyester dye has better resistance to sublimation than ordinary polyester dyes offer—an important advantage in suitings. Eastman Polyester Blue 3RL has excellent processing characteristics...good build-up, good exhaustion and outstanding leveling properties.

Eastman Polyester Blue 3RL is a bright shade of reddish blue. Dyers looking for economy plus performance find Eastman Polyester Blue 3RL an excellent blue component for navies, dark browns, tans and blacks.

Polyester Blue 3RL is only one of eleven primary and shading colors comprising Eastman's new series of dyes developed specifically for use with polyester fibers.

Eastman polyester dyes exhibit excellent fastness to washing, light, dry cleaning and wet pressing. In fact, this new series of polyester dyes, evaluated in laboratory and commercial tests, provides the best over-all fastness properties of any group of polyester dyes currently available.

Dyeing of polyester fabrics is easily accomplished with carriers or dyeing assistants, although these are not required if the dyeing procedure is carried out at high temperature (250°F). Fibers can be readily dyed in tow, tops, stock, or fabric forms. Fabrics of polyester filament can be conveniently dyed in jigs. Fabrics woven of spun polyester yarns alone or blended with cotton, viscose, or wool can be easily dyed in dye-becks.

Tests show Eastman polyester dyes work well in combination with premetalized wool dyes in dyeing polyester fiber-wool blends, and with virtually all types of viscose dyes in dyeing blends containing viscose or cotton.

Ask your Eastman representative to show you color samples of these new, superior polyester dyes:

Eastman Polyester Yellow RL
Eastman Polyester Yellow W
Eastman Polyester Yellow 5R
Eastman Polyester Red B
Eastman Polyester Red 2G
Eastman Polyester Dark Red FL
Eastman Polyester Blue GR
Eastman Polyester Blue GLF
Eastman Polyester Blue 3RL
Eastman Polyester Navy G
Eastman Polyester Black RB

Eastman Polyester Dyes

Eastman Polyester Dyes are sold in the United States by EASTMAN CHEMICAL PRODUCTS, INC., a subsidiary of EASTMAN KODAK COMPANY, in Kingsport, Tennessee; Lodi, New Jersey; and Greensboro, North Carolina. On the West Coast through Wilson Meyer Co., San Francisco, Los Angeles, Portland, Seattle, Salt Lake City. In Canada through Clough Dyestuff Co., Ltd., St. Laurent, P.Q.

extremely soft hand. Dyeing and performance of the finished fabrics have been satisfactory. Vicara's relatively low price makes it most attractive for the mill desirous producing luxury type fabrics at moderate cost. In men's half-hose, too, the presence of Vicara lends a rich soft hand, although wear-resistance particularly under moist service condition is not too good and nylon is generally relied upon to bolster this weakness.

Orlon-Wool Blends

Orlon, Du Pont's acrylic fiber, achieved early success and popularity in blends with 45% wool in women's wear woolens. Its high bulking characteristics permit the spinner to reduce yarn sizes and obtain equivalent diameter yarns with less fiber than is normally used in 100% wool constructions. From a functional point of view, this particular blend created a new type of fabric for the consumer in that properly constructed and finished goods of the 55/45 blend permitted the introduction of permanent pleats, the original pressed-in creases requiring only a minimum of ironing after repeated launderings. At the same time these fabrics were readily washable by hand or machine with the resultant shrinkage well below a reasonable tolerance for dimensionally stable washable materials.

In knit goods, a popular blend with about 20% wool was created to exhibit similar pleat-retention and washability, minimum wrinkling in use and an opportunity for providing attractive cross-dyed effects.

Men's wear worsted type flannels and fleeces, tweeds, shetlands and cheviots with a minimum of about 50% of Orlon also provide crease and shape-retention, good hand and wearing qualities and lighter weight than all-wool constructions of equivalent bulk. Apart from Orlon's contribution of good hand, loft, cross-dye effects and good performance, the union with wool is of help in reducing static generation. In the case of fleeces, Orlon's higher strength permits better napping to give a denser face than is obtainable with 100% wool.

Acrilan Blended with Wool

Acrilan, with somewhat similar properties has found its place in many of the same end-uses. As evidence of the economy of utilizing this fiber in wool blends, fabrics have been developed in which use of 50% of 2-denier Acrilan with 50% of a 58's wool produces a fabric with the hand of a similar blend with 3-denier acrylic fiber and 64's wool. The finer Acrilan adds a cost of only 6¢ a pound as compared with a differential of 35¢ for the better grade of wool.

High percentages of either Orlon or Acrilan have been frowned upon in some military apparel fabrics because of the tendency for those blends to exhibit less resistance to burning than wool. Dynel and Verel are superior in this respect and overcome any such objection. Since the acrylics do not lend themselves to fulling, fabrics of the flannel type are generally made with not over 35% of those fibers.

The use of Dynel in blends with wool in apparel fabrics has been somewhat limited because of the lower glazing or sticking temperature of this fiber. However, it, too, contributes shape-holding and crease-retention in flannels where at least 25% of Dynel is present.

It is not improbable that the acrylic family of synthetics will someday supplant wool entirely in certain apparel fabrics, keeping in mind their tremendous popularity in a short period of time in knitted outwear and blankets. It is my belief, however, that their partnership with wool in a much wider range of men's, women's and children's wear is likely to see further expansion within the next few years. They have the ability to harmonize with wool in the creation of materials which have heretofore been available only through use of the finer and costlier grades of wool. At the same time, these acrylics offer added advantages of lighter weight and excellent performance under all weather conditions.

The ever-improving whiteness of the man-made staple lends itself to good clarity and brilliance of dyed colors. It is thus reasonable to expect further improvements in dyeing properties and methods to reduce processing cost. In due time, also, with productive plant capacities increasing and new competitors appearing on the horizon it may be expected that prices will go downward, if the historical pattern of all man-created fibers is to be followed. Here, then, is a means for not only providing desirable fabrics but a stabilizing effect on fabric prices which have traditionally been subjected to wide fluctuations due to uncontrollable market conditions, war-induced shortages and tariff regulations.

Dacron and Wool

Dacron polyester fiber has undoubtedly been in a class by itself with a number of properties unlike those of any of the other synthetics and with no other directly competitive man-made fiber yet on the domestic market. It, too, found early acceptance in 55/45 blends with wool, in this case in the field of tropical suitings in particular. Remarkable performance in light weight fabrics captured a large part of the summer wear market. Its popularity in this one area seems to be growing every year. Although there was an early indication of a threat to wool with the introduction of 100% Dacron tropical suitings with the novel appeal of completely washable garments, this particular end-use made comparatively little headway.

In this case we witness an example of early recognition of a fiber's limitations, since hand, costly dyeing, pilling problems and static electricity properties were such as to make imperative reliance on other fibers to make up for its weaknesses.

Still to be explored and exploited are heavier weight suitings where Dacron can improve upon the performance of all-wool constructions. In this end use, however, demonstration of Dacron's advantages is not as readily accomplished as in the lighter tropicals normally worn under higher humidity conditions and subjected to more wrinkling and general distortion in service.

In England, Terylene, Imperial Chemical Industries polyester fiber which was the forerunner of Du Pont's Dacron, is achieving widespread use by a large group of the top middle class of weavers in suitings of heavier weights. In my opinion this is particularly significant since Terylene's acceptance is taking place in a country where wool has always been regarded as the indispensable fiber for apparel fabrics and because of the high esteem which we Americans have always had for woolens and worsted imported from England.

So far we have concerned ourselves almost entirely with staple, since this is the most practical way of combining wool with other fibers. There are rare instances in which woolen or worsted yarns are plied with continuous filament man-made yarns to provide

(Continued on Page 71)

For the DYER and FINISHER

Introduce New Emulsion

Flexbond 100, a copolymer of vinyl acetate and vinyl stearate, has been introduced by Colton Chemical Co. Flexbond 100 is a new type of emulsion, said to have high water-resistance, fine particle size, a clear transparent film, permanent flexibility, excellent adhesion, non-toxicity, and grease-proofness. Use is foreseen for it in coating fabrics. *For further information write the editors.*

Acetate Emulsion Data

A technical manual on the use of Gelva KR, polyvinyl acetate emulsions, for textile finishing has been published by Shawinigan Resins Corp. The manual contains complete information on the physical properties of the various KR types and describes compounding and application techniques. The company reports the KR emulsions are used as a finish for cottons and synthetics to improve hand and stiffness. *For free copies, write the editors.*

Dye-Fixing Agent

Metro-Atlantic has two new products. Atcofix 90 is described as a superior resin-based, cationic, dye-fixing agent for direct colors, which may be applied either by exhaustion or padding. The other product, Chlordare, is reported to be a patented finish that enables wash-and-wear fabrics to be safely bleached by housewives and commercial laundries without fiber degradation or yellowing. *For further information write the editors.*

New Geigy Dyestuffs

Geigy Dyestuffs has introduced two new dyes. Irgalan Red 4GL completes the red portion of the spectrum in the Irgalan series, and is said to have superior fastness to light. It is intended for dyeing wool, silk or nylon and blends of cellulosic fibers. Cuprophenyl Blue 3GL, for cotton and viscose rayon, is reported to have good fastness to light, washing and perspiration when aftertreated with copper sulphate and acetic acid. *For further information write the editors.*

Better Cotton Bleaching

A new method for bleaching cotton named the "Activated Hydrogen Peroxide Process," has been introduced by the Solvay Process Division of Allied Chemical & Dye Corp. The company, in describing the process, said it resulted in higher brightness, improved brightness retention, purity, absorbency and dyeability, and reduced ash and metals content without harm to yarn or cloth.

The distinctive step in the process is pre-bleaching with specially prepared hypochlorite after caustic purification. This step is followed, without washing, by bleaching for a shorter period with substantially reduced quantities of hydrogen peroxide and associated chemicals. The company has filed patent application but plans to offer the process to the industry on a royalty-free basis. *For further information write the editors.*

Color Index Price Set

A new price of $112 per set for the four volumes of the Colour Index, published jointly by The Society of Dyers and Colourists, of England, and the American Association of Textile Chemists & Colorists, has been set by the AATCC for sales in this country the last half of 1957. The index contains names, manufacturers, methods of applications, fastness properties, established usages, reactions, etc., for about 5,000 dye entities and 25,000 commercial dye and pigment names.

(For further Notes see Page 65)

Ornamentation of apparel fabrics

Sixth of a Series

Weaving stripes & spots

By Victor Lobl

Take-up

When yarns of different weaves are to be withdrawn from a single beam, as it is the case in our current discussion of combination weaves, the balance of take-up warrants a great deal of thought. It is understood that longer floats bring more warp to the surface thus increasing the prominence of the stripe effect. No wonder, therefore, that designers in their anxious desire of making a distinguishing fabric often have a tendency to employ loosely binding weaves in stripes for striking contrast with the ground. Yet, loose weaves, due to their relatively long floats, do not take up at the same ratio as the more frequently binding ground. The longer such floats are and the more frequently they appear in the design the greater is the take-up differential. Long and relatively frequent floats in the stripe are risky if woven from one beam with the ground inasmuch as such a condition is liable to cause a take-up problem at the loom. Such weaves are permissable only if woven from a separate beam, the so-called top beam. This brings up the ever recurring question in designing stripe effects, whether it can be handled from a single beam, or if it requires a multiple beam arrangement.

A decision of this nature is not always easily made and it is subject to many failings. Even experienced designers are, at times, baffled by the complexity of this problem. Unfortunately, there are as yet no reliable calculations developed for the simple reason that there are so many variables to be considered and every one of them may upset the mathematical formulas. The importance of the weave structure in this respect has already been mentioned. Aside from the weave, the cloth construction, the type of yarn, the yarn count, the reed draw, size content, slasher comb layout, yarn tension at the slasher and at the loom are probably the principle factors to consider but by no means all the conditions which warrant careful study.

It is beyond the scope of the present article to interpret the effect of the above variables on the take-up differential. At this time it is primarily intended to demonstrate that such variables do exist and to indicate their importance to design engineering. Small differences are usually overcome by the inherent elasticity of the yarn and by appropriate handling at the slasher and at the loom. Practical experience verifies that design combinations can be run from one beam without undue difficulty if the decoration interlaces not less than half as often as the ground. This is, of course, not strictly true for all possible conditions, but as far as apparel fabrics are concerned it can be applied safely for the most common constructions.

In this category belong the four harness twill decoration of Fig. 111* and the four harness satin stripe of Fig. 112. In both instances the decoration intersects once every four picks, while the plain ground binds twice as often within the same space. Similarly, no trouble need to be anticipated from weaving the combination of Fig. 113 from a single beam. In this case, the ends forming the longest floats, (five picks) intersect three times within a ten pick interval to the five interlacings of the plain weave. This gives an interlacing ratio of 3:5 which is considered safe for a single beam processing.

As the take-up ratio between the weave combinations widens so does it become increasingly more difficult to weave them from a single beam. Around the borderline are weaves in the 1:2½ combination; in this classification is the five harness satin stripe on plain ground. Owing to the wide margin in take-up this combination is subject to certain limitations with regard to yarn count, construction, width of satin stripe and others. Generally, narrow stripes of fine yarn, not too closely spaced on a sheer construction or on a construction featuring relatively fewer picks than ends, have a better chance of success than the opposite conditions. In addition, this combination requires special slasher comb layout, tauter beaming of the satin ends and appropriate loom setting to prevent these ends from running slack in weaving.

Still looser weaves in stripes will be found necessary to run from a separate beam. Such decorations simply are not practicable to weave from the same beam with the ground because these ends may run so slack that the sagging dropwires keep stopping off the loom. The separate beams are mounted in the loom above the whip roll (top beam) where the tension can be adjusted as required to permit the stripe to stand out prominently over the ground body. In unusual cases there are as many as three top beams used.

In spite of the pointers given above we wish to emphasize again that in the matter of take-up, no hard and fast rule can be given which covers every eventuality. The manner in which many of the take-up factors are ascertained is still largely a matter of judgement based on experience and standard mill practices. Nevertheless, it can be estimated with a fair degree of accuracy so that only reasonable chances are taken. One way to avoid uncertainties is to keep an accurate performance record of all styles the mill makes with the observed facts systematically classified for future reference. Such information offers a realistic foundation for judging the running condition of new styles even though all specifications may not be the same.

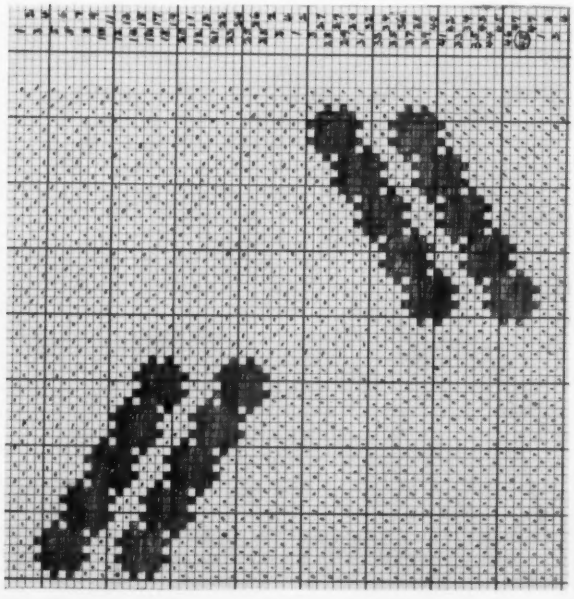
* For Figures 111-116 see previous chapter in June '57 issue.

All weave diagrams used for illustrations in this and in the previous articles were planned for single beams. This was not done for any aversion to multiple beam arrangement but for the simple reason that such work is not a logical part of this chapter. Multiple beam work is part and parcel of every fancy mill. It offers greater flexibility in styling than the single beam method and we shall have a good deal to say about it in the ensuing articles. In favor of the single beam is a lower manufacturing cost and a simpler, smoother operation. In a highly competitive market the saving of a ¼ or ½ cent per yard often makes the difference between selling and not selling. No wonder, therefore, that practical and economically minded mill men give preference to single beam arrangement whenever the design is suitable for it. With this objective in mind the designer endeavors to plan the stripe decoration weaves loosely enough to produce a distinct and full appearance yet not so loose as to require weaving from multiple beams.

Referring again to Figs. 111 through 116, and keeping in mind the previously mentioned 2:1 interlacing ratio, it will be noticed that the diagonal designs of Figs. 115 and 116 have less variation in take-up for the different warp ends than the straight warp stripe of Figs. 111 through 114. This is of course, because the diagonal stripes are formed by all the warp yarn, each in its turn, while the straight warp stripes are formed by the same five warp ends at all times. Consequently it can be seen that the take-up problem for diagonal stripes and patterns will ordinarily be of little concern.

Adjusting Designs to Fit the Loom Capacity

In designing figure weaves, one frequently faces the problem where an elaborate motif has to be modified or too many differently weaving warp ends in a pattern need to be reduced to require no more harnesses for weaving than the loom at the mill will accommodate. Though these problems come up quite regularly in fancy pattern designing, the solutions are not always easily found. This job of fitting and adjusting figure weaves requires a well rounded experience in designing generally and an intimate knowledge of the technical possibilities at the mill.



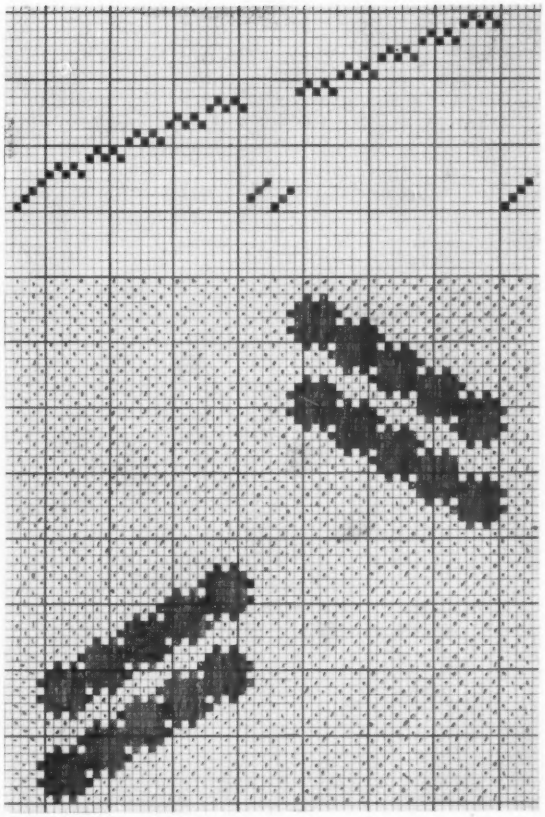


Fig. 117b—This modified version of Fig. 117a can be woven on dobby loom.

Slanted figures, for example, due to their very structure, very often require a straight harness draw. This condition limits these figure weaves in size and distribution much more than those which can be woven by means of pointed or other repetitious drafts. The limitations are more difficult to overcome as the dobby harness capacity becomes smaller. Yet, by skillful manipulation it is often possible to draft down or adjust the design in such a manner that the straight draw can be replaced by a repetitious draw, thus bringing the design within the dobby range.

To illustrate this point more fully let us assume we are interested in weaving on a 26 harness capacity loom, a design resembling Fig. 117a as closely as possible. Examination of the weave (Fig. 117a) will reveal that it requires a nearly straight draw that calls for too many harnesses. To be exact, each of the two figures in the repeat requires 22 harnesses and allowing four additional harnesses for the ground and selvages brings the total up to 48 harnesses, as indicated by the numbers above the design. Since the dobby loom capacity is limited to 26 harnesses, this design cannot be made on it without alteration. A simple change of no more than a 90° turn to the right or to the left makes this design weaveable on the dobby loom (Fig. 117b). In this manner, a repetitious drawing in draft can be employed that reduces the harness requirement from 48 in Fig. 117a to 24 in Fig. 117b.

Fig. 117a—Design of inclined figures not suitable for weaving on dobby loom.

A different method of modifying weaves is presented in Figs. 118a and 118b. The motifs here are constructed to describe coin dots. The size of the dots is the same but the shading makes the difference whether it can be woven on a dobby loom or not. In Fig. 118a a 5 harness twill is employed for shading. This method produces 31 differently weaving ends, as shown in numbers above the motif. Hence, it is not useable for dobby weaving. By alterating the shading to a rib weave, as illustrated in Fig. 118b, the differently weaving ends of the motif itself was reduced to 14. This reduction in harness requirement brings Fig. 118b well within the dobby harness capacity.

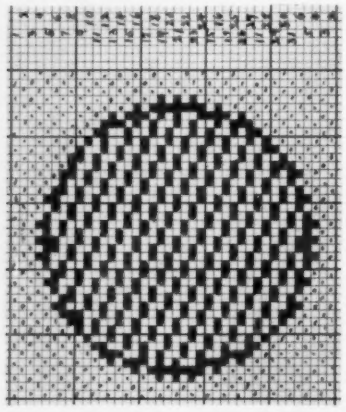


Fig. 118a—Coin Dot. It requires too many harnesses to weave on dobby loom.

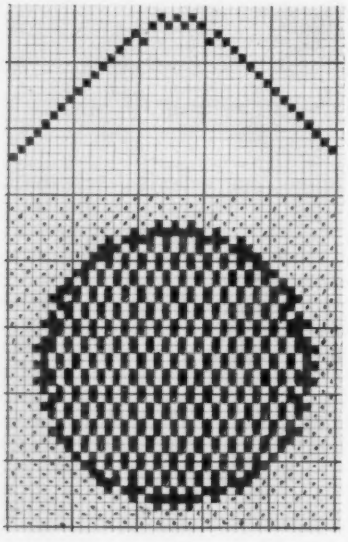


Fig. 118b—Coin Dot suitable for weaving on dobby loom.

An example of partial alteration is shown in Fig. 119a and Fig. 119b. The problem here is to modify the design of Fig. 119a, which requires 21 harnesses (see drawing-in draft) so that it could be produced on a 16 harness dobby loom without changing too much the basic appearance. This means a reduction of five harnesses is needed. There are, of course, many solutions to this kind of problem. One practical solution is illustrated in Fig. 119b. By referring to this diagram it will be noted that the ends drawn in harnesses #5, 6 and 7 of Fig. 119a have been left off. This accounts for a gain of three harnesses. Another two harnesses were gained by changing the center of the figure from a straight draw to a pointed draw, thus reducing the total harness requirement from 21 to 16, as needed.

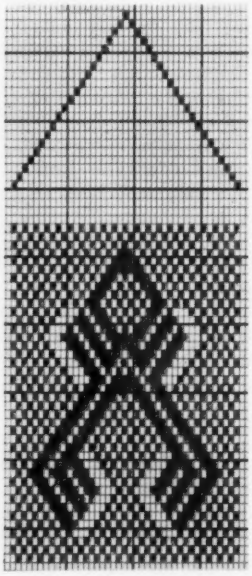


Fig. 119a—Spot figure requiring 21 harnesses for weaving.

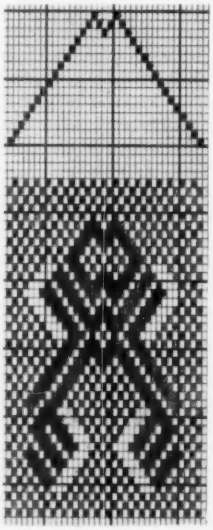


Fig. 119b—Motif of Figure 119a reduced to require 16 harnesses only.

The method suggested here is not unusual, but rather common designing practice and it intends to illustrate how designs can be adjusted to suit the individual need. There is more latitude regarding this type of work in dealing with designs of extra warp or extra filling, but those we shall discuss in the following articles.

To be continued

Nylon Cord Tire Output

Almost one tire in every four produced in 1957 for passenger and truck use will be made with nylon cord, according to estimates by the tire merchandising section of Du Pont's Textile Fibers Department. The prediction is based on current tire production levels, projected by consideration of nylon yarn requirements of tire manufacturers for the remainder of the year.

Indicative of the rapid process of nylon in tires was the finding that 40% of all replacement passenger tires will be made with nylon cord in the current year, a sharp increase over the 25% forecast as recently as February, 1957. Total number of casings for the current year is put at some 110,000,000; of of these, more than 20,000,000 will be nylon cord replacement passenger tires in volume and premium levels.

MACHINERY and EQUIPMENT
SECTION

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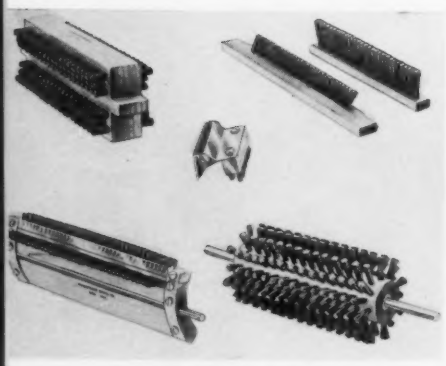


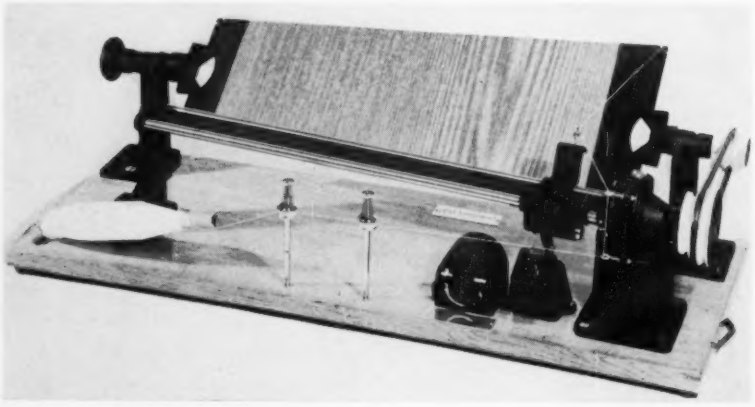
Textile Machine Brushes

A new line of standard and special purpose brushes, featuring plexiglas-mounted nylon bristles designed especially for textile machine applications, has been introduced by the Woonsocket Brush Co. The new brushes available in standard designs are for use in the upper and lower faller section, pressure roll, nip roll and coiler head mechanisms of Warner & Swasey pin drafter intersecting draw frames. The three special purpose models also are intended for pin drafter applications. *For further information, write the editors.*

Counts Yarn Imperfections

Sheffield Corp. now has in production its newly-designed "Neptel" electronic instrument which automatically measures and counts yarn neps and imperfections to control textile quality more uniformly. The Neptel, the company reports, inspects and indicates the number of neps and imperfections in 50 yards of yarn in 30 seconds. A skilled operator is not required to operate the instrument. *For further information, write the editors.*

Electronic instrument "Neptel" for measuring and counting yarn neps and imperfections.

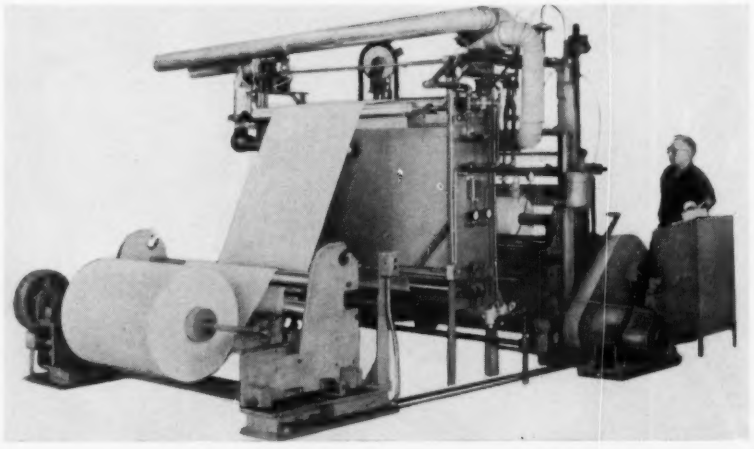


Improved Yarn Inspecting

Watson & Desmond has introduced from Europe the Tonniessen tapered board yarn inspection machine, designed principally for laboratory use. The machine consists of a driving mechanism which rotates a removable tapered black board at any desired speed, and places a single strand of yarn on the board at any desired number of wraps per inch. The device can be adjusted so that any pattern or defect in the yarn will show up vividly on the tapered board. *For further information, write the editors.*

New Web Conditioner

J. O. Ross Engineering Corp. has available a low-cost web conditioner for adding moisture in controlled amounts to textiles, paper, and to other web materials which might require moistening, such as plastics and leather. The conditioner comprises a steel enclosure slightly wider than the web to be conditioned, approximately 38 inches high and 16 inches thick. It is mounted in the path of the goods at any convenient location and the web travels vertically through it, entering and leaving through slots at the top and bottom, respectively. Models also are available for horizontal web travel. *For further information, write the editors.*



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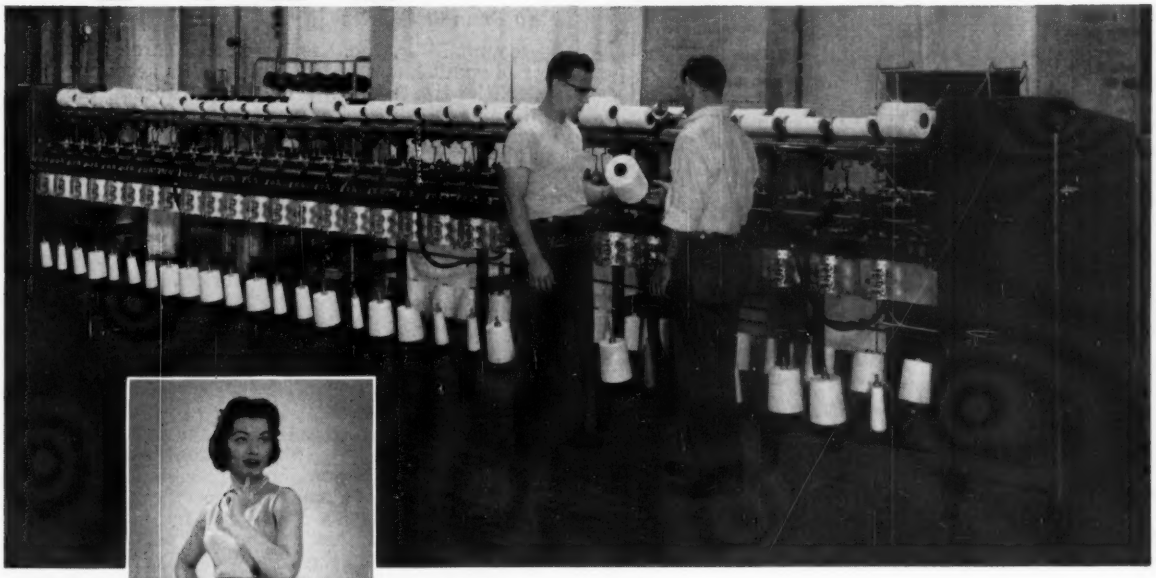

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BLOUSES
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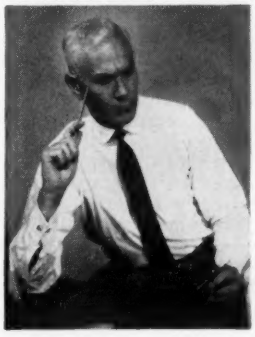
PIECE GOODS
UPHOLSTERY FABRIC
DRAPERY FABRIC
RUGS
MEN'S DRESS & SPORT SHIRTS
JACKETS



U. S. Acme Texturizer Opens New Market Possibilities In Texturing Standard Yarns

You know that "TASLAN"* textured yarns are bringing new luxury, new rich touch and new lightweight comfort to an almost unlimited number of finished products. Now, all filament yarns (either as single ends or in combination) can be textured to interesting new forms that create extra selling opportunities.

The first efficient production unit for texturing filament yarns is the 60-spindle U. S. ACME TEXTURIZER shown above. This new machine is designed for both the wet or dry process of texturing twisted or untwisted filament yarns from cakes, cones, pirns, spools, etc.

Mill operators tell us it gives them a whole new quality and profit approach to yarn texturing . . . with its new, bigger, uniform headless packages, its positive yarn feed control, its simplicity of threading and accurate tensioning.

Get your order in now . . . U. S. ACME TEXTURIZERS are NOW BEING BUILT IN THREE MODELS—60-spindle unit shown above; 50-spindle model for heavier deniers, larger packages; and Single Spindle, Portable Machines.

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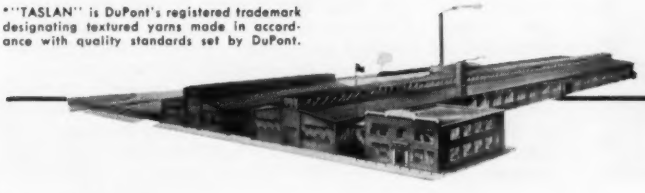
*"TASLAN" is DuPont's registered trademark designating textured yarns made in accordance with quality standards set by DuPont.



U. S. TEXTILE

designers and manufacturers of
U. S. ACME MODERN THROWING EQUIPMENT

NEW FABRICS

NEW YARNS

New Beaunit Fabrics

Beaunit Mills, Inc. has introduced three new fabrics. Beaunit has made available to its accounts elastic fabrics treated with a lanolizing process; the special finish is said to impregnate pure cosmetic-grade lanolin into every fiber so that the fabric is soft and smooth to the touch.

From Ban-Lon yarn the company reports creation of a "second-skin fabric", reported to stretch, move and breath with the wearer's body, and fit into the wash-and-wear category.

Beaunit also has introduced an Acrilan jersey with a pattern into which has been worked a ladder stitch, one-quarter inch in width. The jersey is said to be completely washable with no need to iron, and is particularly suitable for designing into Fall dresses and blouses.

New Pillow Filling

Celanese has announced a new material, "Celafil," for pillow and comforter filling. Celafil is described as a resilient, pure white, moisture-resistant mass of acetate staple fibers engineered specifically for these two end uses. The fiber will sell for roughly one-third the cost of virgin acrylic and polyester fibers. Celanese will sell the fiber as Type K staple and will license pillow and comforter manufacturers to use the Celafil trademark on tags and labels designed and authorized by Celanese. Celafil is a modification of "Celacloud," introduced by Celanese several months ago for mattress filling, upholstered furniture battings and quilted fabrics. *For further information write the editors.*

Urethane Foam Interlining

Hewitt-Robins, Inc., Stamford, Conn., is producing a new urethane foam interlining, called Hewitherm, for use in topcoats, surburban coats, ski jackets, children's snowsuits, and other outdoor garments. Though far lighter than other insulating materials, the company reports that Hewitherm, weighing four ounces per square yard and one-eighth inch thick, has an insulating value equal to one-half inch of virgin wool weighing 8.14 ounces per square yard. This effect is said to be achieved by the thousands of small cells honeycombing Hewitherm.

New Madras Fabrics

Jacobson Fabrics, Inc., has introduced its 1957 Fall line consisting of fabrics of many natural fibers imported from eight different countries in Europe and Asia. According to the company, India madras first began to win wide acceptance in the neckwear industry about 10 years ago; then spread to sportswear, belts, caps and to women's apparel, including raincoats. The company has a selection of over 1,000 Indian madras patterns and several hundred batik prints. *For further information write the editors.*

New Knitted Material

A new knitted material, which combines Orlon with cotton, is being offered by Beaunit Mills for immediate delivery. The new fabric is said to feature the softness of cashmere with the stability and performance of modern synthetics. The fabric is 52 inches in width and can be dyed in brilliant or pastel dyes. The company anticipates the fabric will find acceptance in men's and women's sportswear because of its complete washability and quick-drying, no-iron properties. *For further information write the editors.*

Mills Return to 60 Day Terms

Virtually all large gray goods mills have shifted back to 60 day selling terms after having enforced 30 day terms for a period beginning in May. At the time the mills shortened their terms, the Textile Distributors Institute protested strongly that the move was unwise and would be bad for fabric sales.

The change back to 60 day terms was begun late in August by Klopman mills which made the change retroactive to August 1. Iselin-Jefferson followed suit, and by the middle of September, most of the mills selling gray goods to converters had fallen in line and were again selling on 60 day terms.

Walter Ross of Rosewood Fabrics, Inc., president of TDI, stated that the decision of the mills reinstating 60 day terms "is sound thinking conducive to the normal flow of business between mills and converters." He added that it has always been the goal of sellers in American industry to help customers buy more goods. "Since 60 days is the normal time required by a converter for his operation, it is only sensible that selling terms of mills be adjusted to their customers' needs."

Fabric Merchants Cautioned on Terms

Members of the Textile Distributors Institute and fabric distributors generally have been cautioned by TDI against yielding to pressure from customers for anticipation at more than 6%. In a recent bulletin to TDI members, executive secretary Hilda A. Wiedenfeld stated as follows:

"It has been reported that one of the leading retailers out west and one specialty shop are using a little pressure for anticipation at more than 6% and have accordingly attempted to anticipate at the rate of 7% or 8%, which was disallowed.

"Prices are unsteady enough and any such action as this, which is an effort to change the present custom of the industry, can only make matters worse for you. A good merchant will stick to his guns on principle.

"May we remind you when conditions arise which disturb you, you can find out if they have any basis in fact. This can easily be done by telephoning the Institute and we will make a check for you."

Miss Wiedenfeld also stated that TDI had learned that a mail order house is making a survey of suppliers to ascertain if they will accept a 7% discount.

Dinner-Dance Set for Nov. 7

The 19 annual dinner-dance of the Textile Distributors Institute will be held on Thursday evening November 7, in the Grand Ball Room of the Plaza Hotel in New York City. A cocktail hour beginning at 7 P.M. in the hotel's Terrace Room will precede the dinner. A strictly formal affair, attendance will be limited to 500. Invitations have been mailed by the Institute to members and to yarn producers, mill interests and textile banking interests. Anyone wishing to make reservations is invited to communicate with the Textile Distributors Institute, 469 Seventh Ave., New York 18, N. Y.

Sidney Frankel of Duval Fabrics is chairman of the dinner-dance committee. Other members of the committee are Richard Deneau, Richelieu Fabrics, Inc; Herman Leibmann, A. Steinam & Co., Inc; Frank A. Rosenhaus, Frankly Fabrics Corp., Richard Roaman, Reliable Textiles Co., and Walter Ross, president of the Institute, ex officio.

Outlook (Continued from Page 30)

But this situation is not without its favorable elements. Although sellers will receive smaller orders in advance of the season, they will receive bigger orders during the season. Actual business, in many cases, will turn out better than estimated on the basis of early business. And if mills and converters avoid inventory accumulation, a firm tone should be maintained in fabric prices.

Textile Prospects Are Good—In any case, it is plain that the industry will begin 1958 in a statistically strong position. There will be no big accumulation of inventories, which would lead later to liquidation and a serious weakening in the gradually improving price structure.

Man-Made Fibers Gain in Rugs

Use of synthetic yarns in carpets and furniture upholstery was prominent at the recent International Home Furnishings Market in Chicago. Two mills, Callaway and Roxbury Southern, exhibited rugs and carpeting made of the newly-developed, heavy-denier lofted Chromspun and Estron continuous filament acetate yarns manufactured by Eastman Chemical Products, Inc. Callaway's Chromarama line, retailing at under $11 a square yard, is said to have outstanding resiliency and soil resistance. Roxbury's Sunweave line, made to retail at under $8 a square yard, is available in solid and tweed tones.

Intensive tests, according to Industrial Rayon Corp., another exhibitor at the show, disclose that carpets made of nylon staple fiber may be expected to last as much as 10 times longer than wool carpets of comparable construction. The company said the tests also showed that nylon carpets have a substantially higher degree of texture retention and a better recovery from crush than comparable wool carpets.

First upholstered pieces to be tagged under the American Viscose Corp.'s program of quality control for Avisco rayon products made their appearance at the home furnishings market on products of the International Furniture Division of Schnadig Corp.

Allied Chemical & Dye Corp. also displayed the latest developments in carpets and furniture upholstery made of fabrics featuring Allied's Caprolan polyamide fiber, alone or in combination with other types of nylon. Carpets of texturized filament nylon were shown in both cut and loop pile constructions.

Mill Costing

(Continued from Page 34)

in raw material or labor costs can be effected on the cost cards without redoing the whole system.

We strongly advise clients to refigure their costs on some of their major styles using a raw material cost which is 1¢ greater than what was originally used. By comparing the resulting costs with those originally computed it is possible to determine the percent increase which must be applied to the original cost figures for each 1¢ increase in raw material cost.

A cost system to be of maximum usefulness should be revised and brought up to date at frequent intervals. Otherwise a mill will end up with a system which has too many estimates involved to be reliable. A few years ago I was auditing a mill which had a complete cost system, but the whole system was based on prices and production levels as of 1945. All the changes since 1945 were effected by % increases or decreases so that any resemblance between actual current costs and those shown on the cost cards were purely coincidence.

The mill was seriously considering dropping certain lines of goods because they felt the current market did not give them a sufficient margin over costs. We persuaded the management to have costs brought up to date before making any decision on changes in selling policies. This was done and it was found that improved manufacturing methods, changes in work loads and so forth had made substantial reductions in costs which had not been reflected in the old system. As a result, the management found that many of the items which they were considering abandoning were actually quite competitive.

Don't Mix Your Apples and Oranges

Next I would like to discuss an error which I call the apples and oranges fallacy or perhaps the general overall average mistake. This is where costs for an operation are accumulated and are then divided by the total yards or pounds produced to arrive at the cost per pound. Now the difficulty in recognizing this fallacy is that the costs are substantially correct if your products are all fairly similar, but this is a very dangerous assumption to make without giving the matter careful thought. To illustrate this error, let me cite the example of a manufacturer who was making furniture fabrics. He accumulated his total mill costs and divided by the number of yards of fabric produced to get his mill cost, other than material per yard. Since all his furniture fabrics were very similar except for raw material this system gave him fairly reliable costs and he operated quite successfully.

About a year ago, however, he expanded into transportation fabrics which sold at a substantially higher price than the furniture fabrics, but which required considerably more processing. Being a good mill operator he decided to budget his costs before going into any extensive manufacturing program on the new fabrics. He accumulated the estimated costs that he would incur on the operations including both furniture and transportation fabrics and divided by the total yardage to produced. He was delighted to discover that the profit to be realized on the new fabric was beyond his wildest dreams.

This delight soon turned to dismay, however, when he found that, based on the budget, he could no longer make his furniture fabrics competitively. A few minutes thought, however, convinced him that something was wrong. He next had his production manager make a very careful analysis of the manufacturing processes involved in making new transportation fabrics including time studies of knitting times. Next he divided his new fabrics into classes depending on the complexity of the processes involved and computed a coefficient for each class so as to convert the yardage produced back to basic furniture fabric yardages.

> Keep your system flexible so changes in raw material or labor costs can be made without undoing the whole system.

When he divided his projected new costs by the equivalent yardage of furniture fabric he arrived at costs which were more reasonable. The problem of conversion to equivalent units is a difficult one for which there are no easy solutions. One way it can be done is by a detailed analysis of the operating times and processes involved for each style as was done in the case just cited.

Another and somewhat similar method is to use a basic labor unit, and using actual manufacturing experience for some period of time arrive at the relations of various styles to a basic style expressed in terms of productive labor units. A third and much simpler method is to use the relationship between selling prices to weigh the various styles. It may be said that this fallacy is so obvious that anyone with any sense would avoid making this mistake. But I have seen yarn mill after yarn mill that has figured costs on a per hank basis and applied this cost to all yarns produced without regard to twist. This method works fairly well so long as the mill maintains a fairly constant balance between warp and filling yarns. But let its production in some period shift from low to high twist yarns and results will be very disappointing. In connection with yarn mills I might cite another widely held belief that yarn weights bear a direct relationship to costs. In other words, that a singles 20 yarn should cost half what a singles 40 costs. This is a conclusion which I seriously doubt. Time studies on production times which have been made by one of my clients tend to bear me out in my doubt. There is, of course, a difference in production cost between yarns of different weights; but the relationship does not seem to me to bear any direct relationship to the yarn weight.

Testing is Vitally Necessary

Finally, we come to the problem of testing a cost system. You may have the best cost system available, but if you have no way of knowing how actual costs correspond to estimated costs, you may end up with some disappointing results. The best method to test actual results against figures used to set up costs is by means of budgets. A budget can be very complete covering sales, production, materials, labor, manufacturing, selling and administrative expenses. The more complete a budget is the more helpful it will be. A minimum budget, however, is one that covers only expense items and correlates each item of expense to some measurement of volume such as sales, material costs, labor costs or a combination of these three items.

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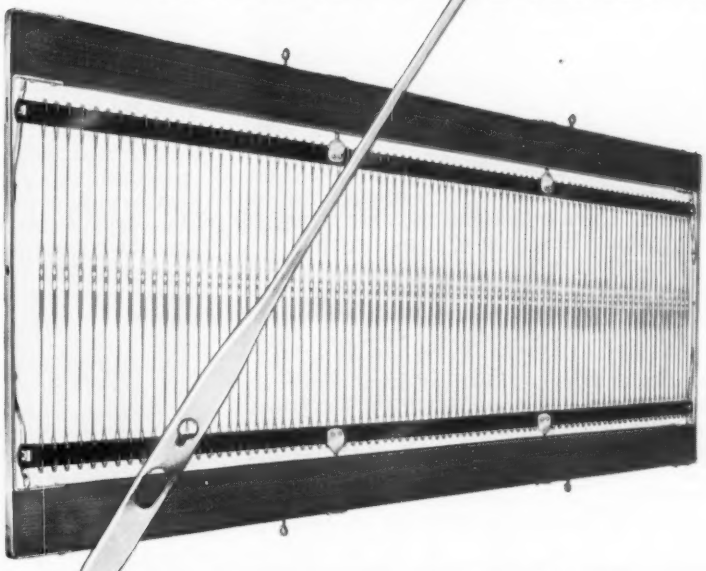

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Stehedco Drawtex Heddles and Frames have revolutionized the textile industry with their efficient, trouble-free performance, greatly increased production and higher quality goods.

Stehedco Drawtex Heddles are made of the finest quality spring steel, highly polished to handle your most delicate yarns. The exclusive spring effect guarantees quick and easy drawing in by hand or machine.

One heddle size can be used for a much wider range of yarn sizes and constructions, and every heddle is a repair heddle which can be added or removed at any position on the frame.

Stehedco Drawtex Frames are made of select fir lumber, straight and knot-free. The new type C-2 end brace rigidly clamps the heddle rods so that there is no wear on either the brace or the rods. The rods may be removed by slight pressure of a screwdriver, and as easily replaced.

Only Steel Heddle offers you both the rigid rod hook and removable rod hook, giving you a choice to suit your particular needs. They eliminate all warp streaks frequently caused by the bunching of heddles at conventional type rod supports.

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OTHER PLANTS AND OFFICES: GRANBY, QUEBEC, CANADA • LAWRENCE, MASS. • GREENSBORO, N.C. ATLANTA, GA. • TEXTILE SUPPLY CO., DALLAS, TEXAS • ALBERT R. BREEN, CHICAGO, ILL.

Now budgets are not mysterious nor is it necessary for them to be difficult and complicated. If a mill has a cost system at all it must have had an expense budget in order to set the system up in the first place even though the budget may have been the mill's actual results for the past year, or the past several years or some actual period in the past.

The subject of this article is not budgets or budgeting control except insofar as they help prove a cost system against actual costs. I shall, therefore, proceed on the assumption that there is a budget upon which the cost system has been based. This we will call the basic or "standard budget". We will also assume for our discussion that the measure of volume is direct labor.

Our first job will be to break our expense budget down between fixed and variable expenses. If you have a cost system this step has already been done with the standard budget. Next we express the variable expense items as a percent of direct labor. We now have our complete standard budget showing direct labor at standard; fixed expenses at standard, and variable expenses at standard and also expressed as a percentage of direct labor.

Next we set up alongside of the comparable items in the standard budget a second budget which we will call the actual at standard budget. This second budget will show actual direct labor used during the period; fixed expenses the same as shown in the standard budget, and variable expenses which represent the same percent of actual labor as standard variable expenses represented of standard direct labor.

In a third column we will list our actual expenses. We are now ready to see how closely our actual operations come to the estimates used in setting up our costs. The variance between our standard budget and our actual at standard budget represents variances arising from external causes—lack of sales, strikes, etc.—and this variances has no effect on the accuracy of our costs.

The variance between the actual at standard budget and actual results will tell us how accurate our costs are, since if our costs are 100% accurate they should equal the actual at standard budget. Variances between our standard budget and our actual at standard budget has no effect on costs, and this is true although the differences between these two budgets may help explain why our costs are inaccurate.

> Your cost system should be revised and brought up-to-date frequently. Otherwise, your system will have too many estimates to be reliable.

There is another method of proving costs which does not involve budgets. This method is to cost out each unit produced or sold using costs, per the cost cards and comparing the results with actual. This is probably the most accurate method of proving costs. But the statistical detail necessary to use the system and the necessity of costing out each element of cost separately in order to localize variations often makes this method too cumbersome or too expensive for practical use.

I have now covered in a general manner some of the major errors and omissions which have come to my attention over the past 15 years. I have tried to confine myself to fairly general comments covering areas where I have seen attempts at costing breakdown not once, but many times. Costing and the maintenance of an adequate cost system is a difficult area of management. Although basically many cost systems are similar in practical application each one is different. In brief, a cost system is good if it is not too complex; if it is flexible and current; if it does not give confusing results because it is trying to measure dissimilar items, and if it can be adequately tested for accuracy.

A talk originally presented at the seminar, "Textiles Today", conducted jointly by the National Association of Wool Manufacturers and Philadelphia Textile Institute. Mr. Drury is a member of the firm of Commery, Davis & Jacobson.

New Nylon Staple Fiber

Limited output of Du Pont 420 nylon, a new staple fiber, is under way at the firm's Seaford, Del., plant. Several leading textile mills, Du Pont reports, are in production on fall fabrics fortified with the new nylon, described as a high tenacity staple with low elongation at break and which "works" well with rayon and cotton.

Cotton work clothes and men's and boys' rayon suits and other apparel can wear an average of 70% longer or more when they are made of fabric fortified with the new fiber, Du Pont states. Work pants containing the new product will be placed on the market this fall.

In basic work clothing twill fabrics, 420 nylon is used in work yarns only. Retail prices of work pants containing 25% 420 nylon will be approximately 25% more than all-cotton garments of the same weight and construction.

In basic spun rayon fabrics for men's and boys' apparel, tests were said to show that use of 15% 420 nylon in both the warp and filling yarns results in an average 70% increase in wear life, while use of 20% results in approximately double the wear life of all rayon fabrics of the same weight and construction. Rayon slack fabrics fortified with 15% of the new nylon will cost about 15% more than their all-rayon counterparts.

Research on use of 420 nylon in Type IV cotton work clothing twill fabrics, Du Pont reports, has shown the nylon-fortified fabrics have a flex abrasion resistance of an average 6,800 strokes on standard testing equipment, which compares to an average of 1,400 for the all-cotton fabrics. The fortified twill has an average breaking strength of 242 pounds, compared with 191 pounds for all-cotton fabric, and a tear strength of 11.4 pounds, compared with nine pounds for all-cotton fabric.

Du Pont is producing 420 nylon in a 2.2 denier, inch and a half staple. It will sell for $1.28 a pound, the same price as regular nylon staple. Production of the new staple will be limited to less than 50,000 pounds per month, pending on the installation of essential new equipment.

Enka Nylon Expansion

American Enka Corp. has announced an expansion program for its nylon facilities at Enka, N. C., that will cost over $5,000,000. Operation of the new facilities, scheduled to start the latter part of 1958, will nearly triple production of fine denier nylon textile yarns and total capacity will be increased by 75%. The company reported that demand for fine denier nylon textile yarns for use in the tricot knitting trade has exceeded Enka's production capacity for a number of months.

John M. Reeves

(Continued from Page 31)

was only natural that the increasing success of John Mercer's older brothers in the expanding textile industry should exert a strong magnetic pull on him.

The Reeves brothers came from a long line of sturdy, hard working, bible-reading western North Carolinians. For generations running back to Revolutionary War days, the Reeves had been farmers in the Yadkin River valley near Siloam in Surry County. When John Mercer was two years old, the family had moved to a farm near the town of Mt. Airy closer to the Virginia state line. The six Reeves brothers (John Mercer was the youngest) worked the farm side by side under the supervision of their father. Thus they absorbed deeply the long-standing Reeves family values of respect for hard work, for sober and thrifty living, for active religious belief and a deep hunger for education.

But in the town of Mt. Airy back at the turn of the century education was hard to come by. The oldest son, Richard Early, managed to get in a few years at Oak Ridge Academy, a nearby boarding school. Later, when he was doing well with Hunter, he encouraged his younger brothers to go to the same school. John Mercer Reeves spent a year at Oak Ridge after he had exhausted the educational resources of the Mt. Airy public school.

In 1906, he enrolled at the University of North Carolina, and with the help of $2,500 borrowed over four years from his older brothers, he took his degree in 1910. He then began to teach, and made good progress until that day in 1913 when he decided that textiles was a field more challenging for a man of his energy and ambition, and one offering greater possibilities of increasing his earnings.

On to New York

To prepare himself for his new career, John M. Reeves took a job at Mooresville Mills. He also managed to squeeze in a course at North Carolina State College where he boned up on the principles of costing in textile manufacturing, and learned something about the methods of textile management. Thus equipped, John came north to New York in 1915 and was taken on at Hunter as a salesman.

In the New York fabric market, the tall, lean, soft-spoken young man from North Carolina began to pick up quickly the basic skills of textile trading that in later years, enriched by his own remarkable aptitudes, were to make him widely respected as a successful merchant. Just as he was beginning to find his way around the market and score his first modest successes as a salesman, the United States became involved in the first World War.

Obeying the irresistible impulse that seems to seize all young men from the North Carolina hills when the war bugles begin blowing, John enlisted in the Navy. His longing to see something of deep water and foreign parts was frustrated, however, when the practical-minded Navy people learned of his textile experience. He was quickly trained as an officer, given the title of ensign and assigned to take charge of the Navy Clothing Depot in Brooklyn. In keeping with his engrained habits of working hard, John Mercer Reeves did a good job in his humdrum Navy assignment. But when the war was over and he was released, he hurried back to Worth Street

WHEN HORSEPOWER MEANT HORSEPOWER—John M. Reeves out for a buggy ride when he was the young principal of the high school in Dothan, Ala.

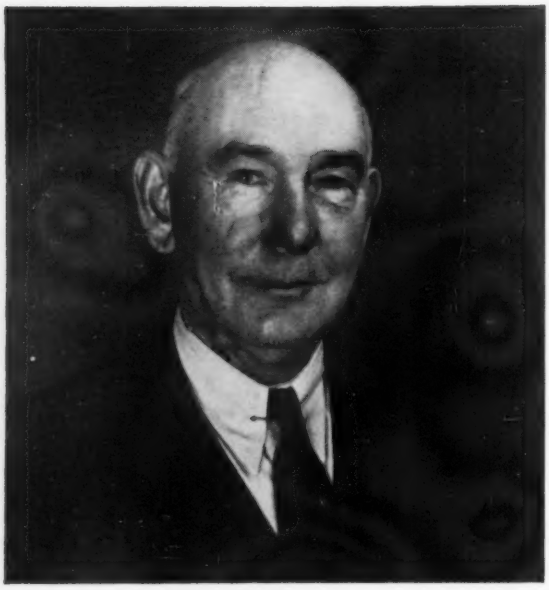
glad to be a civilian again, and glad to be handling civilian fabrics once more.

In those days of the early 1920's marked by an explosive expansion of America's standard of living, great things were brewing in the textile industry. The air was full of possibilities for growth and profits for those who had business ability and the energy to get moving. John Reeves and his older brother, Micajah Rufus Reeves, recognized that the time was at hand for them to strike out for themselves. They formed their own company, Reeves Brothers, Inc. with ownership of two mills and the selling agency for two additional mills. They sold a variety of cotton goods to the New York garment trade including pajama checks, nainsooks for underwear, print cloths and twills.

Reeves Grew Rapidly

As independent business men, Mike and John Reeves soon proved that they were an outstanding team. By 1922, their business had grown to the point where its sales were running close to $8 million a year, and their ownership of manufacturing equipment had climbed to 1,400 looms and some 60,000 spindles. During the next year, Reeves Brothers built a new mill at Woodruff, S. C., equipped with 700 looms and 35,000 spindles.

With this brand new plant, the company began to move fast in a direction which has been its main course ever since: the production of fine combed goods, especially broadcloths and poplins. The Reeves brothers shrewdly realized that profit margins in high quality combed goods were much higher than in carded print cloths and other standard carded goods that any mill could weave. In time, Reeves became an outstanding producer of better grade combed goods, and became especially recognized for their high sley cotton poplins for outerwear and fine twills such as their famous Byrd Cloth.



M. R. Reeves

Micajah Rufus (Mike) Reeves, who died in 1942, founded Reeves Brothers with John M. Reeves in 1920. Another brother well-known in textiles, Richard Early Reeves, president of Hunter Manufacturing & Commission Co., died in 1926.

In 1928, the company built its own large finishing plant at Fairforest near Spartanburg, S. C. During the 1930's John M. Reeves, pushing forward with his idea that there were better opportunities in fine goods, brought out Reeves well-known Army Twill, a good 8.2 ounce fabric for work clothes to meet the increasing demand among working men for something more attractive than heavy denims and at the same time equally serviceable. Reeves pioneering in this direction won a good response from the manufacturers of work clothes and the company thus prospered in another field.

When the United States entered the war in 1941, Reeves, by its long specialization in high quality cotton outerwear fabrics was in an outstanding position to meet the needs of the military for a wide range of these cloths. When the war was ended, Reeves resumed its expansion with the acquisition of the well-known Eagle ampers and Phenix Mill of Columbia, Ga., and the construction in 1951 of a big, superbly equipped finishing plant at Bishopville, S. C., with a capacity of a million yards a week of synthetic fabrics.

Branching Out in Plastics

In recent years, Reeves has energetically branched out in other directions to complement its strong position in fine combed cottons and high quality man-made fiber fabrics. It entered polyethylene fiber production as one of the pioneers in this field. As a result of this new departure, the company currently has as a wholly owned subsidiary, Reeves Plastics, Inc., which has expanded recently as new end uses in textiles and plastics are developed for polyethylene materials. In another move toward diversification, the company's Vulcan Rubber Products Division manufactures offset and news paper press blankets as well as coated nylon fabrics for a variety of industrial uses.

In the three decades since Reeves Brothers was first established, it has grown steadily to reach its present position as one of the country's important fabric weavers. With seven mills equipped with more than 200,000 spindles and 3,400 looms, and three large modern finishing plants; with annual sales last year of more than $62 million, the company is an eloquent testimonial to the business genius, the devotion to hard work, and the fabric marketing skills of its founders.

Keeps in Close Touch

Today at the age of 70, John M. Reeves serves as chairman of the board of Reeves Brothers. Although still deeply immersed in the complex tasks of steering his company toward increased growth and prosperity, he has delegated the job of day-to-day supervision to his able nephew, John E. Reeves, who is president. From his winter home in Pinehurst, N. C., and his summer home at Buck Hill Falls, Pa., John M. Reeves makes frequent trips to New York to keep in touch with basic management tasks at Reeves Brothers in New York City.

He keeps in touch, too, with his other interests, largely concerned with doing good for his fellow man. Those who know him say that John M. Reeves all his life has been possessed by a deep sense of charity and willingness to help others. His sister, Lillian, reports in her charming history of the Reeves family an early example of her brother's generosity and feeling of family responsibility. When he had his first job as a teacher at Dobson, N. C., he learned that the mortgage was about to be foreclosed on the home of an old woman who had been first a slave and later a much loved servant of the Reeves family many years earlier. With his first savings from his small salary, John paid off the mortgage allowing the old woman to keep her home.

A Generous Giver to Good Causes

Since that thoughtful act many years ago, John Reeves has given liberally to many good causes. He was largely responsible for building the fine YMCA building in his native town of Mt. Airy. He has kept up his original interest in education by monetary help to a number of colleges. Among these has been the American University in Washington, D. C., of which he is a trustee; Wofford College in Spartanburg, S. C., where his help enabled the setting up of five professorships named after him; and Centenary College at Hackettstown, N. J. where he is also a trustee, and where his benefactions have resulted in the John M. Reeves Student Union Building.

John Mercer Reeves remains as he has been all his life, a friendly, easily accessible man with a great faith in the future of textiles. "Along Worth Street," he says, "I have always been known for my optimism, and my optimism remains undiminished."

For the textile industry, he sees, in the long-range view, an era of increasing prosperity. Among the elements contributing to his optimism are the continually rising standard of living of American, and the emergence of a younger generation that has never known a depression and is not afraid to spend freely for the satisfaction of its expanding needs. ■

PAPERS OF THE
AMERICAN ASSOCIATION FOR
TEXTILE TECHNOLOGY INC.®

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How Zefran performs in fabrics

Here is the first report on the properties of Dow's fiber as shown in experimental fabrics and garments

By O. R. McIntire

ZEFRAN® Dow's new textile fiber, has been designed to combine the excellent physical properties of synthetic fibers with the versatility in processing and dyeing of the natural fibers. Zefran will enable the textile industry to use processing, dyeing and finishing techniques which have been developed over hundreds of years and which are available in existing commercial facilities. At the same time Zefran will produce fabrics which will meet the standards of today's consumer.

The physical properties of Zefran are shown in Figure 1. Of particular interest is the low shrinkage

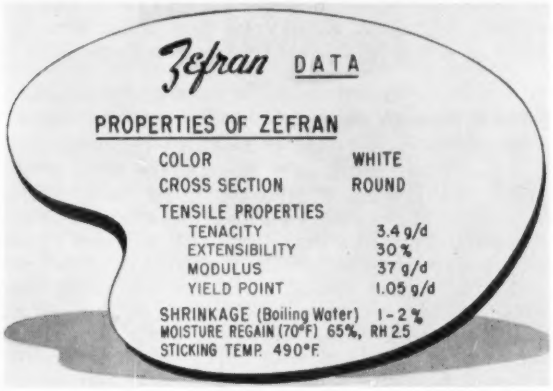


Fig. 1

in boiling water which contributes dimensional stability to fabrics. Another significant property is the 490°F sticking temperature, which is higher than many other fibers and is important in the resistance to glazing during ironing.

Figure 2 shows a typical stress strain curve in the dry and also in the wet condition. The high modulus and yield point of the wet fiber shows that it retains its crispness and dimensional stability and retains 90% of its dry properties even while wet. Figure 3 shows in more detail the moisture regain properties of Zefran. The first figure showed the moisture regain to be 2.5% of the standard 65% R.H. and 70°F.

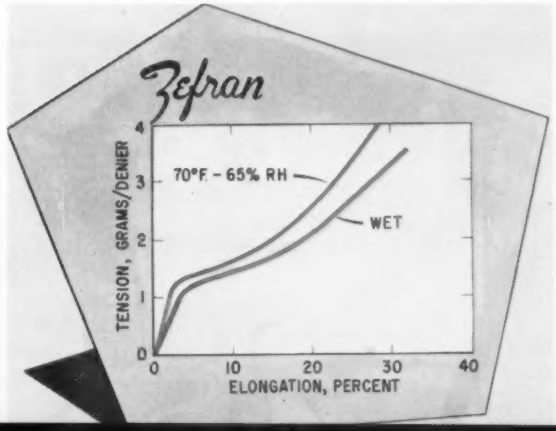
Presented at Sept. 11, 1957 meeting.

Mr. McIntire is technical director, textile fibers department, Dow Chemical Co. Previously he was assistant director of Dow's polychemicals research department. He joined Dow in 1940 upon graduation from the University of Kansas with a degree in physical engineering. He has to his credit a number of publications and patents in the fields of plastics and fibers.

O. R. McIntire

This curve shows the moisture regain at various humidities. This moisture regain, while it is low when compared to the natural fibers, is higher than many synthetics and contributes to the control of static problems, both during processing and in fabric form, particularly at higher humidities. It also con-

Fig. 2



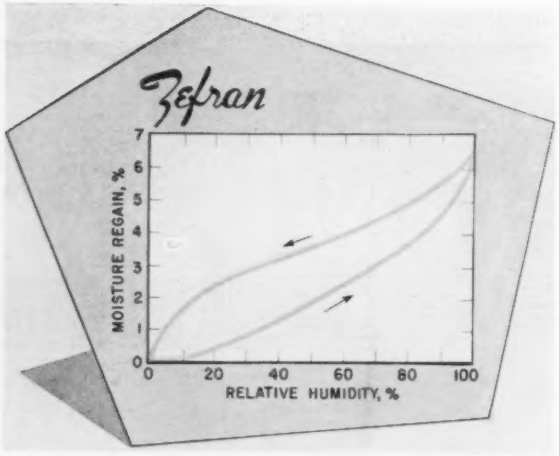


Fig. 3

tributes to comfort in fabric form, although here the fabric construction and finishing conditions probably overshadow the effect of moisture regain.

These basic properties, as good as they are, only indicate the contribution Zefran can make in fabric form. There is a strong trend today to use synthetics in blends with natural fibers and with other synthetics. For this reason Zefran has been specifically tailored to fit into conventional textile manufacturing and dyeing operations used for natural fibers and so it is particularly suited for such blends. We are still engaged in an active program to determine practical properties obtained in fabrics produced from Zefran.

The fabrics used in determining the data presented here were primarily engineered to obtain data rather than for developing commercially satisfactory products. Even so, we feel that from these fabrics a sense of Zefran's flexibility and versatility can be gleaned. While the story is not yet complete, it is encouraging and points the way to successful fabrics.

First, Zefran has good bulk. Zefran has a low density of 1.19. Combined with its resilence and permanent crimp, this produces yarns having high natural bulk and covering power at low weight, which means fabrics of Zefran have more loft and warmth or insulating value than comparable weight fabrics made from cotton, rayon or even wool.

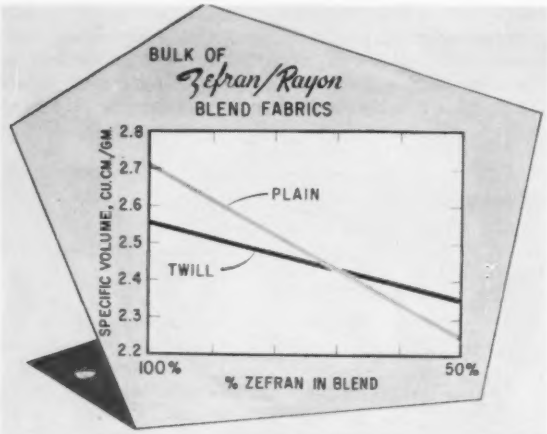


Fig. 4

Figure 4 shows Zefran's bulk compared to rayon. These data were determined from fabrics containing Zefran and Zefran/rayon blends in two types of construction. The bulk was determined by measuring the fabric thickness with a compressometer and calculating the volume of a weighed sample of fabric. It is obvious from the curves that Zefran has considerably greater natural bulk than rayon and similar data will show the same effect with cotton or wool. Of course the actual bulk or fabric density is different for each fabric, but in constructions containing Zefran the bulk advantage must be taken into consideration in fabric design.

Zefran Dries Quickly

While Zefran has sufficiently high moisture regain to promote comfort and low static in fabrics, it still has the ability to shrug off the effects of moisture and to dry quickly. This results in good maintenance of appearance, resistance to shrinkage and makes it useful in minimum care fabrics, provided sufficient quantities of Zefran are incorporated into the blend.

Figure 5 shows the ability of Zefran to contribute to the retention of press during laundering. These fabrics were laundered in a standard home laundry with synthetic setting and air dried. Notice that the Zefran not only maintains its crease, but also does not become wrinkled or mussed.

Figure 6 shows a pleated skirt of 100% Zefran fabric which was laundered and then allowed to dry with no ironing. It shows very satisfactory pleat retention. Figure 7 shows the contribution of Zefran in various blends to dimensional stability during laundering.

Zefran has good wrinkle recovery. Figure 8 shows some commercial ties compared to a Zefran tie after being knotted under identical conditions for twenty four hours. These ties were all of the same construction with the same liners. Notice the good recovery of Zefran compared to the cotton and rayon and the roughly equivalent recovery to wool which is recognized as a fiber with good recovery characteristics.

Wrinkle Recovery Measured

While Zefran has good dry recovery characteristics, it is really the resistance it shows to the effect of humidity which is more important in its use in blends with other fibers. Figure 9 shows this effect. We have measured standard Monsanto wrinkle recovery values on a wide variety of fabrics of varying constructions and with various blends. Of course, the fabric construction has a pronounced effect on the actual wrinkle recovery value. However, when the wrinkle recovery is measured with changing humidity, the effect of humidity depends to a great extent on the composition of the blend and much less on the fabric construction. These data are average values for a number of fabrics and show the effect of humidity on the wrinkle recovery. The effect of Zefran in resisting the effect of humidity on the wrinkle recovery is evident from these data.

Zefran has good resistance to deformation at high temperatures. This is demonstrated in fiber form by the sticking temperature of 490°F which is high for synthetic fibers. This high sticking temperature should afford some relief in the problem of glazing during ironing. Specific information on glazing is difficult to obtain in the laboratory as a characteristic of a fiber since it is affected so much by blend composi-

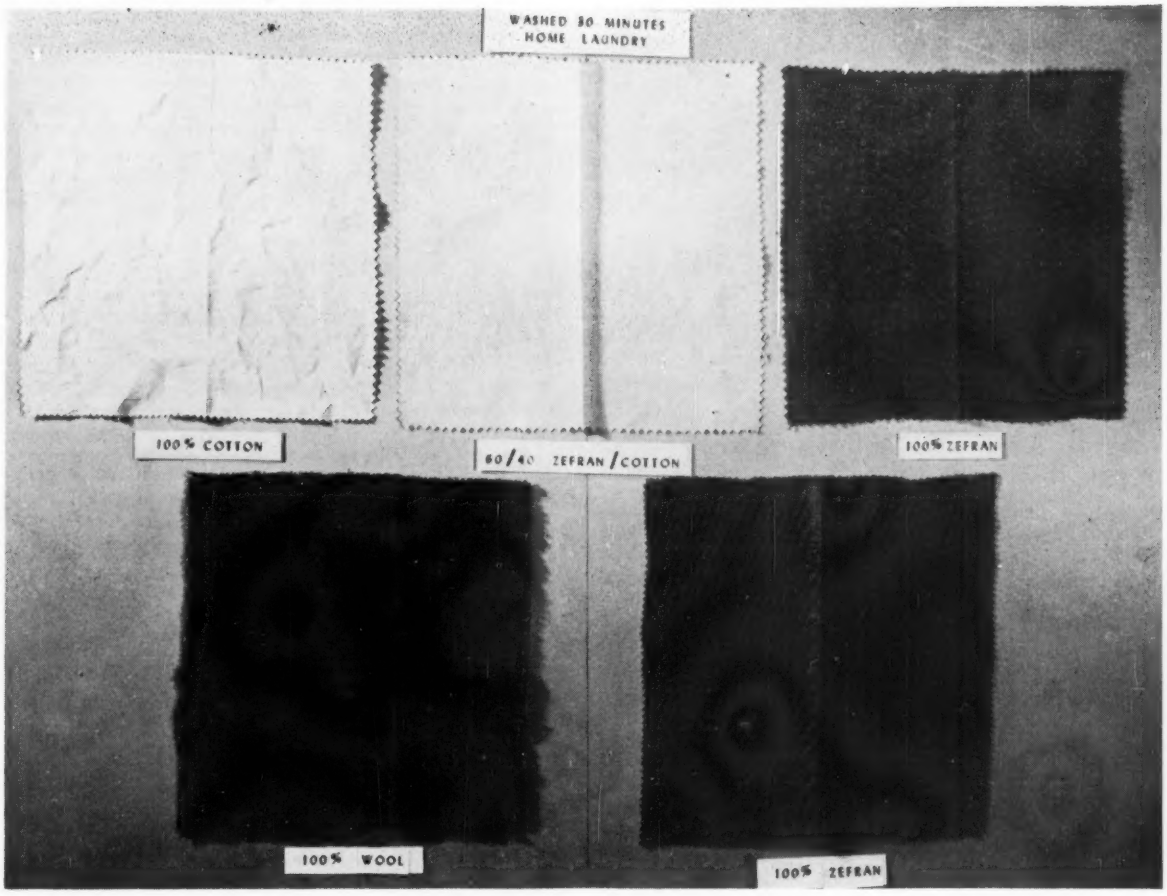


Fig. 5

tion, fabric construction, types of seams, etc. Qualitatively, as will be seen later, our wear tests indicate that Zefran does not produce glazing problems.

Laboratory data on pilling is difficult to obtain in absolute fashion. Pilling is so much dependent upon yarn and fabric construction and upon finishing conditions that absolute data on pilling, relative to the fiber itself, is almost impossible to determine. Early in our laboratory work in the development of Zefran we recognized the relationship between abrasion resistance and pilling tendency. Characteristics which yield exceedingly high resistance to abrasion also contribute to a high degree of pilling. The characteristics of Zefran were adjusted to maintain adequate abrasion resistance and still minimize the tendency to pill. Our laboratory data on fabrics confirm our early expectations that Zefran has less tendency to pill than some of the other synthetics fibers. This will be apparent below in the report on our wear testing program.

Zefran's resistance to microbiological attack and deterioration from rot is shown in Figure 10 which shows change in strength with soil burial.

These, then, are the general physical properties of fabrics based on Zefran. All in all, they point the way for Zefran's use in a wide number of apparel, household and industrial applications. But before it can be used in these applications, it must be made into fabrics which can be dyed and finished with relative ease.

In this area Zefran achieves a very fine showing. Textile people are, by now, well aware of the problems that synthetic fibers can introduce into the mills in processing, dyeing and finishing. The real problem is to maintain the desirable properties outlined above and still minimize the processing and dyeing prob-

Fig. 6

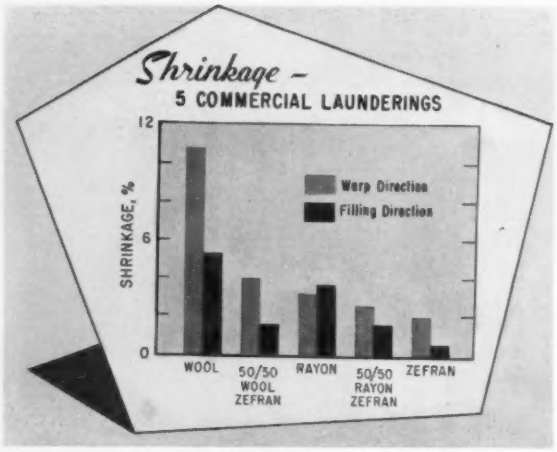


Fig. 7

lems. In general, two approaches have been used to obtain dyeability. One is to modify dyeing procedures by going to high temperatures, using swelling agents, developing new dye stuffs, etc. This is undesirable since it creates many problems in the mills and necessitates the installation in some cases of additional new and expensive equipment.

A second approach has been to introduce a dye receptive component into the polymer chain from which the fiber is made. This aids the dyeing problems but it also results in a sacrifice in the basic physical properties of the fiber. Zefran has been modified to obtain dyeability by a unique new process to yield dyeability without sacrificing the good physical properties outlined earlier. This technique is best described as a "nitrile alloy." Zefran is based on polyacrylonitrile as are some other synthetic fibers in the field today which are commonly called acrylics. While Zefran has the general properties of acrylics and is based on acrylonitrile, it is sufficiently different and unique that we feel the alloy designation is justified to distinguish it.

Figure 11 demonstrates what we mean by alloy. The structure in the top shows a typical copolymer

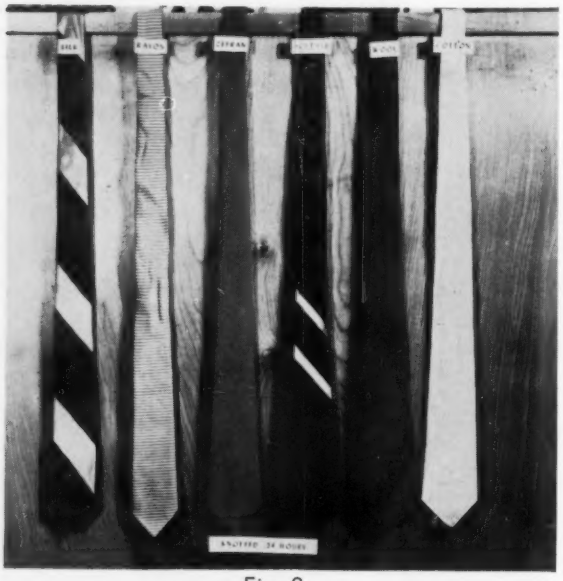


Fig. 8

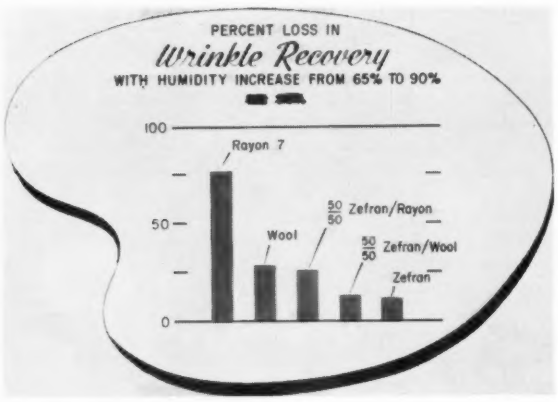


Fig. 9

structure in which the dye assistant additive is incorporated in the polymer chain. The bottom structure shows the alloying technique in which the dyeing assistant is incorporated in a matter which does not

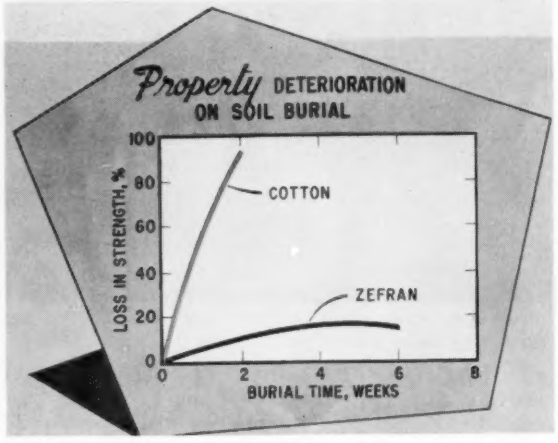


Fig. 10

interrupt the basic polymer chain but allows it to retain all of its inherent physical properties.

At the same time the dye receptive component is effective in building the moisture regain properties

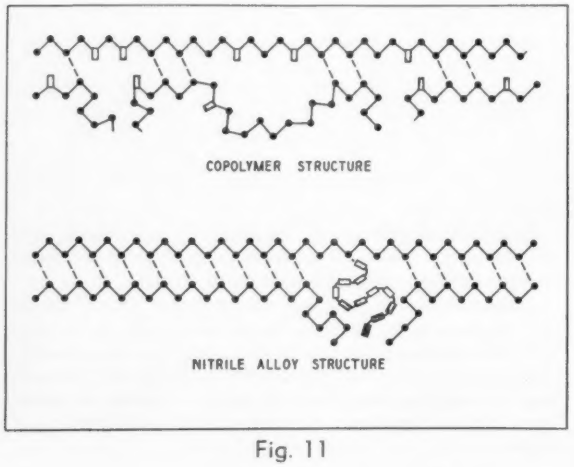


Fig. 11

mentioned earlier. The nature of the dye assistant and its position on, rather than in, the polymer chain allows Zefran to offer more flexibility in the choice of dyestuffs than any other fiber, natural or synthetic.

There are five classes of dyestuffs which are recommended for Zefran—vasts, insoluble azoics (naphthols), sulfurs, after treated directs and neutral premetallized acids. Satisfactory dyes are available for essentially all colors and all end uses. These five particular classes have been chosen primarily because of their excellent fastness properties, which we feel complement Zefran's physical durability.

The dyeability of Zefran with the anthraquinone vats is particularly important. This class of dyestuffs is recognized to have outstanding fastness properties to both sunlight exposure and high temperature laundering. Its use has been chiefly limited to date to cotton and rayon since most man-made fibers have shown little affinity for it applied at temperatures below the boil. The same excellent fastness characteristics of these vats is obtained in Zefran dyeings under conventional conditions. In addition to these five classes of dyestuffs, still other classes will dye Zefran with satisfactory color build-up if fastness requirements are not high.

Those skilled in dyeing procedures will recognize that these classes of dyestuffs enable Zefran to be dyed in conjuction with all of the natural fibers. For example, the excellent Zefran dyeability with vats adapts it particularly for use with cotton and rayon.

Zefran Dyes Well

Some vat dyestuffs show even greater color yield on Zefran than on cotton so that Zefran can be said to be more dyeable with cotton type dyes than cotton itself. Excellent unions can be obtained in conventional dyeing procedures at normal temperatures. Just as adjustments in concentration and temperature must be made in union dyeing rayon and cotton blends, similar adjustments must be made with Zefran cotton blends. Each blend and color change requires determination of the adjustment required, however, we have had excellent results in obtaining good unions with vats, naphthols, and after treated directs with rayon and cotton blends. The important fact is that the excellent fastness characteristics of the vat dyestuffs is maintained in Zefran dyeings so that the durability of the fiber itself is matched by the dyestuffs.

Similarly in the dyeing of wool blends the Zefran can be dyed with neutral premetallized dyes while the wool with acid premetallized. For heather effects acid premetallized dyes may be used. Resists or retarding agents can be effectively used in obtaining cross dyeing effects.

Zefran has been satisfactorily dyed on commercial scale in raw stock, yarn and piece form. Varying types of stock and package dyeing machines have been used. Pressure dyeing in this form has not been found necessary or advantageous. Piece dyeings have been made on becks, jigs and continuous units.

Zefran also has excellent processing characteristics, and has processed well both alone and in blends with wool, cotton and rayon on standard equipment utilizing the cotton, American synthetic, standard worsted and woolen systems. Zefran can also be satisfactorily processed on the newer tow-to-top conversion systems. At present, because of its superior resistance to shrinkage at elevated temperatures, Zefran does not develop the degree of differential shrinkage now associated with the high-bulk process used for acrylic fibers. Laboratory work, however, is encouraging and a high shrink version of Zefran is a good possibility.

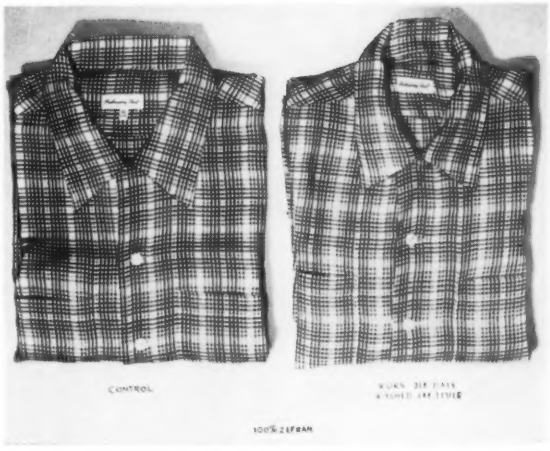


Fig. 12

Of course, there are some problems in the processing and dyeing of Zefran. For example, Zefran has, in common with all acrylonitrile-containing fibers, some tendency to yellow when used at high temperatures in contact with strong caustic solutions. Some of the standard cotton procedures for preparing the fabric for dyeing must be modified to avoid this problem. But satisfactory simple and conventional methods are at hand to overcome these problems. Moreover, Dow has ready at all times technical service personnel to go out and work with the mills so that the body of our experience is available to the mills to meet their problems.

A wide variety of textile applications are suggested by Zefran's ease of care properties and its ease of processing and dyeing. Our development program, based on pilot plant produced fiber, has been designed to perfect these applications and has been underway for several years.

Soon after the first of the year we expect to introduce a number of commercial fabrics which have emerged from the development work. Even before Dow established mill evaluation programs, considerable work was done to make fabrics for our own internal appraisal of Zefran's utility in various fields. In some cases these fabrics were not properly constructed to yield commercial quality fabrics, however, valuable test information was revealed from our own program, and the results of these wear tests have been quite gratifying.

It may be worthwhile to review some typical examples from this wear test program. The first garments made from some 100% Zefran gingham fabrics. A number of these shirts were made and distributed for wear evaluation. The ones shown in Figure 12, are typical. The one on the right was worn 214 days. It has been laundered in home laundry 148 times. Still it has almost the same fresh appearance as the original on the left which was never worn. In addition there are no signs of pilling. The shirt did not become stained or discolored at the wear points. There were no odor retention problems. It was wearable without ironing and there were no wrinkling or mussing problems. It has been a comfortable shirt to wear.

Fig. 13

Figure 13 shows a 50-50 wool-Zefran flannel fabric which was also made into a sport shirt. Here again the one on the right was worn 90 days, washed in home laundering 35 times. It has shown excellent dimensional stability, no appreciable shrinkage, and needs little ironing. It is warm, comfortable to wear and also you will notice it shows no pilling.

Fig. 14

Figure 14 shows a 50-50 Zefran/rayon blend sport shirt. It also shows excellent retention of appearance and properties after 75 days of wear and 25 washings. The striking thing about these shirts is their excellent retention of appearance after such long periods of wear.

Fig. 15

Figure 15 shows a 100% Zefran suit. It has been worn 100 days and drycleaned 20 times. This fabric is one of those which showed excellent press retention, and from this standpoint it could have been laundered. However, it was tailored with regular thread and lining so that it is not really a wash and wear suit. It does certainly have good appearance retention. There are no pills, no discoloration, no bagginess or distortion. It shows good wrinkle resistance. In short, it is a very satisfactory suit. Since this is a 100% Zefran suit, it does exhibit some static problems, but only in the driest weather. During most weather it is completely satisfactory.

These are only a few of the garments which were produced in our initial wear testing program. This evaluation program demonstrated the versatility and also the practicability of Zefran use in apparel fabrics. Its basic characteristics also indicate its successful utility in many areas of household and industrial type uses. With this background, Dow has decided to produce Zefran and we are in the process of constructing a new facility for this purpose in Lee Hall, Virginia. This plant is scheduled for completion in early 1958. Zefran initially will be available in 2, 3, and 6 denier staple and tow. As our research and development progresses additional forms will be available. It is important to notice that this plant is not merely a production plant but is actually a complete facility providing also for the supporting activities so necessary to a successful textile fiber operation.

AATT Will Hear How Detroit Buys Fabrics

How textile materials are selected and purchased by American automobile manufacturers will be the subject of the October 2 meeting of the American Association for Textile Technology, Inc., in New York City. The meeting will be held in the Della Robbia Room of the Hotel Vanderbilt, 34 Street and Park Ave.

Beginning with a social hour at 5:30 P. M., the meeting follows the serving of dinner. Tickets for members are $5 and for non-members $6. All interested persons are invited to attend.

The speaker will be Erwin Zagiel, research engineer in the textile laboratory of the body engineering department, Ford Motor Co. He will explain how his company selects textile materials and its reasons for doing so. He will present detailed descriptions of textile materials used in auto interiors.

These will include woven and vinyl coated fabrics used in seats, door panels, and headlinings as well as paddings, carpets, convertible tops and other places on cars. The speaker will discuss in detail fabric constructions used in autos, and engineering requirements they must meet. He will also discuss future textile trends in the automotive industry.

Dyeing Notes

(Continued from Page 45)

New Silicone Softener

Zimmerman Associates has announced commercial production of Zacone, described as a new, low-cost, non-yellowing, stain-resistant silicone softener for use by the textile and related trades. The new product, according to the company, is not an emulsion but forms true solutions of excellent stability to heat, salts, dye fixatives, etc., and is particularly suitable for use in all types of resin finishes. Zacone also is said to inhibit the formation of formaldehyde odor in resin-treated goods. *For further information write the editors.*

Dacron Optical Whitener

Ciba has introduced a new type of fluorescent brightener, Uvitex ER Conc., for producing brilliant white effects on Dacron. The new product also is said to yield excellent results on acetate, Arnel, cotton, nylon and rayon. The company reports the two main features of the newest addition to its Uvitex series are its high effectiveness on polyester fiber and its extremely good light fastness. Application of the optical whitener can be made from long liquors by exhaustion or from an aqueous dispersion by padding. *For further information write the editors.*

New Textile Softener

A new textile softener, Synthravon SL, which can be applied to cellulosic yarns and fabrics, has been introduced by Arnold, Hoffman. The company describes its new product as an inexpensive, easily-handled softener and lubricant particularly suitable for undyed yarns and fabrics because it will not yellow or cause rancidity to devolop. Heat resistance and stability in storage and in finishing baths are also said to be excellent, without any chlorine retention. *For further information write the editors.*

Useful Technician's Handbook

Recently published, the newly revised, ninth edition of Lange's Handbook of Chemistry is now available from Handbook Publishers, Inc. Sandusky, Ohio. The book's major purpose is to present carefully selected material to meet the needs of chemists, engineers, physicists, patent attorneys and others whose work requires technical information but have limited time available to dig for such information. The handbook has 1985 pages, is bound in fabricoid, measures 5⅜ by 7¾ inches and is priced at $8.50. It has an index of 27 pages with more than 3,000 items.

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in September, 1957. All prices are given as subject to change without notice.

RAYON FILAMENT YARN

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

Den/Fil	No Turn Skeins	Turned* Skeins & Cones	8½ Turns	High Turn Skeins & Cones 12 Turns	15 Turns	18 Turns
40/30	$1.49	$1.95	....	....	....	$2.08
50/36	1.24	1.50	....	....	....	1.80
65/45	1.14	1.30	....	$1.53	....	1.58
75/60**	1.04	1.18	....	1.41	$1.46	1.49
100/74**	.95	1.08	....	1.33	1.38	1.44
125/60	.94	1.05	$1.09	1.30	....	....
150/120	.93	1.02	1.12	1.27	....	....
300/225	....	.95	....	....	1.08	....

* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.
** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

Den/Fil	No Turn Tubes	No Turn Beams	5 Turn Beams	5 Turn Cones	12 Turn Beams	12 Turn Cones	15 Turn Cones
40/30	$1.35	$1.35	....	....	....	....	....
50/36	1.00	1.00	....	....	....	....	....
65/45	1.05	....	....	....	....	$1.42	....
75/45*	.97	....	$1.08	$1.08	$1.31	1.31	$1.39
100/60*	.89	....	1.03	1.03	1.23	1.23	1.31
125/60	.84	....	.99	.99	....	....	....
150/90*	.77	....	.81	.81	1.15	1.15	1.24
150/120	.81	....	.93	.93	....	....	....

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

Nub-Lite (Short Nubbi)

Code	Den/Fil	2½ Turn Natural Cones	2½ Turn Cones*	5 Turn Natural Cones	5 Turn Cones*
1515	160/90	....	....	$1.45	$1.35
1519**	155/90	....	....	1.45	1.35
2008	200/120	....	....	1.06	.96
2027***	210/120	....	....	1.06	.96
3002	315/180	$1.10	$1.00	....	....
4011	410/224	1.10	1.00	....	....
6001	600/360	1.08	.98	....	....
8001	860/450	1.08	.98	....	....

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.
** Code 1515 can be run in warp or filling.
*** Code 2027—Softer than 2000.

CUPIONI Type B

Code	Den/Fil	No Turn Skeins	2½ Turn Cones	5 Turn Cones
9610	50/30	$1.39	....	$2.14
9650	70/45	1.29	$1.64	....
9660	100/60	....	1.48	....
1545	150/90	....	1.25	....
9720	200/120	....	1.20	....
9730	285/135	....	1.10	....
9792	450/225	....	1.10	....
9814	600/372	....	1.07	....
9837	940/372	....	.97	....

"Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black comes in all deniers."

Long Type A

Code	Den/Fil	1½" Turn Cones	2½ Turn Cones	5 Turn Cones
9690	150/135	....	$1.25	$1.30
9739	290/135	....	1.05	1.10
9781	460/372	....	1.05	1.10
9816	600/372	....	1.02	1.07
9827	900/372	....	.95	1.00
9877	1180/372	$.95	....	1.00
9926	2500/744	.95	....	1.00

STRATA SLUB

Code	Den/Fil	Turned Cones	Price
9697	150/135	3½	1.30
9747	275/225	3½	1.20
9798	450/372	2½	1.10
9823	600/372	2½	1.05
9847	960/372	2½	.97
9885	1290/372	1½	.95
9934	2680/744	1½	.95
9964	4750/1488	1½	.95

"Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra."

FLAIKONA

Code	Den/Fil	Turned Cones	Price
9769	300/224	3½	1.40
9807	600/405	2½	1.20
9840	900/450	2½	1.10

"Spun Dyed Cupracolor Black 35¢ per pound extra."

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

American Enka Corp.

Current Prices
Effective December 4, 1956
Standard Quality Yarns

Standard Quality Rayon Yarns

A. Natural

Den./Fil.	Luster	Turns	Weaving Cones	Beams	Skeins Long	Skeins Short	Cakes	Knitting Cones
50/18	E	5 S						1.56
50/20	B	2.5 S&Z					1.45	
75/10	B	3 S&Z					1.08	
75/18	E	4 S						1.22
75/30	B	2.5,4S&Z	1.17	1.17			1.08	1.17
75/30	B	8 S	1.22			1.37		1.22
75/45	P,E	2.5, 4,5S&Z	1.17	1.17	1.23	1.37	1.08	1.17
75/60	B,P	3,4 Z	1.22				1.10	1.22
100/14	B,P	3 S&Z				1.12	.96	
100/40	B,E	12 S						1.27
100/40	B,P,E	4,5 S&Z					.96	1.04
100/40	B	6 S	1.10					
100/40,60	B,P	2.5,4S&Z	1.04	1.04	1.08	1.12	.96	1.04
100/60	E	2.5 S	1.06	1.06			.98	
125/40	E	3 Z						.96
150/40	B,P,E	2.1,3S&Z	.91	.91	.94	.99	.86	.90
150/40	B,E	5 S&Z	.91		.94	.99	.86	
150/40	B,E	8 S&Z	.97		1.00	1.05		
150/40	B,P	10 S&Z	1.03	1.03				
150/90	B,E	2.1 S&Z	.92	.92			.87	
200/40	P	3 Z						.82
200/40	B,P	8 S				.95		
250/60	P,E	2.4 Z						.75
300/50	B,E	3 S	.73	.73				
300/60,120	B,P,E	2.1 S&Z	.73	.73		.76	.71	.73
300/60	B	3.5 S	.73	.73		.76	.71	
300/60	B	4.3 S	.76	.76			.74	
300/60	B	7 S	.83					
300/40,120 H.T.	B	2.5, 3,4S	.75	.75				
450/80	B	3 S	.70	.70		.72	.68	
600/80,120	B,E	3 S	.69	.69			.67	
900/120	B	3.4 S	.68				.66	
900/120 H.T.	B	3.6 S	.70				.68	

"Jetspun" Colored Yarns

Den./Fil.	Tenacity	Turns	Weaving Cones	Beams*	Cakes	Colors
100/40	Regular	2.5S	1.39	1.39		All
150/40	Regular	2.1S	1.26	1.26		All
200/40	Regular	8.3S	1.27			All
450/80	Regular	3.0S	1.05			All
300/40	High	3.4S	1.10	1.10		All
600/80	High	3.4S	1.06			All
900/120	High	3.4S	1.05	1.05		All

Registered trade mark of American Enka solution dyed rayon yarn.
* Single color.

"Skyloff"

American Enka's Lofted Filament Rayon Yarn
Natural and Jetspun (R)
Types Available and Prices

Denier	Den/Per Filament	Natural	JETSPUN Black	JETSPUN Other Colors
2200	15	$.62	$.72	$.79
2700	15	.60	.70	.77
4300	8	.59	.69	.76
5300	15	.58	.68	.75

American Viscose Corp.

Effective December 14, 1956

Graded Yarns

Denier	Filament	Type	Short Skeins	Long Skeins	All Cones Beams Tubes	Cakes
50	20	Bright & Dull	$	$1.59	$1.56	$1.45
60	10	Bright	....	....	1.41	1.30
75	10-30	Bright	1.24	1.20	1.17	1.08
75	30	Dull	....	....	1.17	1.08
100	14-40	Bright	1.12	1.07	1.04	.96
100	60	Dull	....	....	1.06	.98
150	24-40-60	Bright & Semi-Dull	.99	.94	.91	.86
150	40	Dull	....	....	.91	.86
150	90	Dull	....	....	.92	.87
200	10-44	Bright	.90	.85	.82	.78
250	60	Semi-Dull & Dull	.82	.78	.75	.73
300	44	Bright & Dull	.79	.76	.73	.71
300	234	Dull	....	....	.75	.73
300	120	Rayflex 6-Turns	....	....	.85	.83
450	100	Bright	....	.72	.70	.68
600	100	Bright	....	.71	.69	.67
900	60-100-150	Bright	....	.70	.68	.66
1200	75	Bright	....	.67	.65	....
2700	150	Bright	....	.70	.68	....

Extra Turns Per Inch

75	30	Bright 6-Turns	$1.36	$1.32	$1.29	$ ....
100	40	Bright 6-Turns	1.24	1.19	1.16	1.08
150	40	Bright 6-Turns	1.09	1.04	1.01	.96
300	15	Bright 5-Turns	....	....	.78	....
300	44	Bright 6-Turns	....	.86	.83	.81
600	30	Bright 5-Turns	....	.76	.74	.72

Appalachian Group Meetings Planned

The Appalachian Group of the American Association for Textile Technology, Inc., will open its fall programs with a meeting in Kingsport, Tenn., on Thursday Oct. 10, at 6:45 P. M. The place of the meeting will be announced at a later date.

The subject of the meeting will be "recent work in wash and wear cottons," and the speaker will be Dr. J. David Reid, Southern Utilization and Development Division, Dept. of Agriculture. Reservations may be made by contacting Howard Thompson, Secretary, Tennessee Eastman Co., Kingsport, Tenn.

The Appalachian Group's second meeting will be on December 5 with Jack Ross of the Wright Air Development Center speaking on "military uses of textiles". The meeting will be held at the Franklin Club, Elizabethton, Tenn.

Nylon Tire Cord Unit

The Firestone Tire & Rubber Co. has installed at Akron, Ohio, a nylon heat treating unit which it describes as the world's largest. The unit is designed to give nylon cord special characteristics for the production of extra high quality tires. Untreated nylon cord, the firm pointed out, is not suitable for making tires to meet its standards.

The electronically controlled cord tensioning and gum-dipping facility wil permit the company to turn out special treated gum-dipped nylon to make safer, stronger and longer lasting tires, Firestone reported. The gum-dipping process, which impregnates the filaments of the tire cord with chemical and liquid rubber, gives firm adhesion between the plies and the tread.

Rayflex Yarns

100	40	Rayflex	$	$	$1.07	$ .99
150	60	Rayflex	....	....	.94	.89
200	75	Rayflex	....	....	.85	.81
300	120	Rayflex	....	....	.75	.73
300	120	Rayflex 6-Turns	....	....	.85	.83
450	120	Rayflex	....	....	.72	.70
600	234	Rayflex	....	....	.71	.69
900	350	Rayflex	....	.72	.70	.68

Super Rayflex Yarns

600	490	Super Rayflex	$	$	$ .78	$ ....
900	720	Super Rayflex	....	....	.77	....

Thick and Thin Yarns

150	40-90	Bright & Dull	$	$	$1.15	$ ....
200	75	Bright & Dull	....	....	1.05	....
300	120	Bright & Dull	....	....	.95	....
450	100	Bright & Dull	....	....	.92	....
490	120	Bright & Dull	....	....	.95	....
900	350	Dull	....	....	1.00	....
920	120	Bright & Dull	....	....	1.00	....

Colorspun Yarns

Currently producing regular and high tenacity at premiums at $.35 per pound.

Viscose Filament Yarns

The following material deposit charges are required:

Metal Section Beams	$170.00 each
Wooden Section Beams	55.00 each
Wooden Section Beam Crates	30.00 each
Metal Section Beam Racks	75.00 each
Metal Tricot Spools—14" flange	30.00 each
21" flange	60.00 each
32" flange	150.00 each
Metal Tricot Spool Racks—14" flange	135.00 each
21" flange	100.00 each
32" flange	75.00 each
Wooden Tricot Spool Crates	20.00 each
Cloth Cake Covers	.05 each

Same to be credited upon return in good condition—freight collect.
Terms: Net 30 days.

Celanese Corp. of America

Current Prices
Effective December 14, 1956

Den.	Fil.	Twist		Beams	Cones	Cakes	Non Shrunk Tubes
#40 and #14 Production							
75/30/3	Bright			....	$1.11	$1.03	....
100/40/2Z	"			$.96	....	....	....
100/40/3	"			.98	.96	.91	....
100/40/5	"			....	1.02	.97	....
100/60/3	"			....	.97	.92	....
125/40/2Z	"			.94	.92	....	....
150/40/3	"			.89	.85	.80	....
150/40/2Z	"			.87	....	....	....
150/40/5	"			....	.91	.86	....
150/40/8	"			....	.97	.92	....
150/40/0	"		NS	....	.71	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"		NS	....	.63	....	....
#20 Production							
150/40/3	Bright			.87	.83	.78	....
150/40/0	"		NS	....	.71	....	....
150/40/2Z	"			.87	....	....	....
300/50/3	"			.72	.71	.69	....
300/50/0	"		NS	....	.63	....	....
#20 Production							
100/40/3	Dull			....	.96	.91	....
100/60/2Z	"			1.00	....	....	....
100/60/0	"			....	.93	....	....
100/60/5	"			1.04	1.02	.97	....
150/40/3	"			.87	.83	.78	$.77
150/40/0	"		NS	....	.71	....	....
150/90/3	"			....	.90	.85	....
250/60/0	"		NS	....	.67	....	....
250/60/3	"			....	.75	....	.70
#32 Thick & Thin Rayon							
150/60/3	Bright			....	1.15	....	....
450/120/3	"			....	.89	....	....

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.
Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with orders December 7, 1956

Bright and Dull

Den.	Fil.	Turns/ Inch Up to		(A) Cones, Beams, Tubes	Skeins	Cakes
40	20	3	Textile "Cordura"*	$1.90	$1.90	$1.85
50	20	3		1.63	1.63	....
50	20	3	Textile "Cordura"	1.65	1.65	1.60
50	35	3	Textile "Cordura"	1.70	1.70	1.65
75	10	3		1.17	1.20	1.08
75	15	3		1.17	1.20	1.08
75	30	3		1.17	1.20	1.08
100	15	3		1.04	1.07	.96
100	40	3		1.04	1.07	.96
100	60	3	Bright	1.04	1.07	.96
100	60	3	Dull	1.06	1.09	.98
125	50	3		.96	.98	.90
150	40	3		.91	.92	.86
150	60	3		.91	....	....
150	60	3	Textile "Cordura"	.92	.93	.87
150	90	3	Dull	.92	.93	.87
150	100	3	Dull	.92	.93	.87
200	35	3		.82	.84	.78
200	20	3		.82	....	....
300	50	3.5		.73	.76	.71
300	120	3	Textile "Cordura"	.74	.77	.72
450	72	3		.70	.72	.68
600	96	3		.69	.71	.67
600	240	3	Textile "Cordura"	.70	.72	.68
900	50	3		.68	.70	.66
900	144	3		.68	.70	.66
1165	480	3	Textile "Cordura"	.68	.68	.65
1800	100	3		.68	....	....
2700	150	3		.68	.70	....
5400	300	3		.75	....	....

Thick and Thin

100	40	3	#7	1.38		1.38
150	90	3	#7	1.15	1.16	1.15
200	80	3	#7	1.05	1.06	1.05
450	100	3	#7	.89	.90	.89
1100	240	3	#50	1.32		1.32
1100	240	3	#60	1.00		1.00
2200	480	3	#60	.95		.95

(A) 2¢/lb. additional for cones less than 3# and tubes less than 2#.
Terms: Net 30 days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.
* "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective December 21, 1956

Denier	Filament	Turns per In.	Type	3.8 Lb Cones	4.4 Lb Cones	Beams	2.2 Lb Tubes	4.4 Lb Tubes
100	40	2.5 "S"	Bright	1.04		1.04		
150	40	2.5 "S"	Bright	.91		.91		
150	40	2.5 "S"	Luster #4	.91		.91		
150	40	2.5 "S"	Bright intermediate strength	.92				
200	20	2.5 "S"	Bright	.82				
200	40	2.5 "S"	Bright	.82				
300	44	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Bright	.73		.73		
300	80	2.5 "S"	Luster #4	.73		.73		
300	80	2.5 "S"	Bright extra strong	.75		.75		
450	60	2.0 "S"	Bright		.70	.70		
600	90	1.5 "S"	Bright		.69	.69	.69	.69
900	50	2.0 "S"	Bright		.68	.68	.68	.68
900	150	1.5 "S"	Bright		.68	.68	.68	.68

Luster #4 is semi-dull.
Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River. PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corp.

Current Prices

First Quality Yarns	Den/Fil	Z Twist	Cones Knitting* Cones	Cones No Twist Knitting Cones	Cones Beams, Tubes** and Weaving Cones	Untreated Cakes
	75/30	3.5			$1.17	$1.08
	75/30	7			1.30	
	75/30	15			1.37	
Normal	75/30	20			1.40	
Strength Yarns	100/40/60 Brt.	3.5			1.04	.96
NARCO	100/40/60	12			1.22	
	125/52/60	3			.96	.90
	125/52	10			1.13	
	150/42/60/75	3	$.90		.91	.86
	150/42	0		$.71		
	300/75	3	.73		.73	
	300/75	0		.63		
	600/98	3	.69		.69	
	900/46	2.5	.68		.68	
	1800/92	2.5	.68		.68	
Semi-High Strength Yarns Hi-NARCO	300/75	3			.74	

* Oiled Cones $.01 Per Pound extra for Graded Yarns only.
** 1 lb. tubes $.02 Per Pound extra for Graded Yarns only.
Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.
Prices subject to change without notice.

RAYON HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective November 1, 1956

Tempra (High Tenacity)

Denier	Elongation	Beams & Cones
1100/480	Low	.59
1230/480	High	.59
1650/720	Low	.55
1820/720	High	.55
2200/960	High & Low	.55

Textile News Briefs

Electrical Equipment Meeting

A forum on "What's New in Textile Electrical Equipment" will be featured at the sixth annual conference on Electrical Applications for the Textile Industry, November 14-15, at North Carolina State College, Raleigh, N.C. The forum will be jointly sponsored by the Textile Industry Subcommittee and the General Applications Committee of the American Institute of Electrical Engineers.

Plan New PTI Building

A proposal that the Philadelphia Textile Institute Foundation underwrite $200,000 of the total $650,000 required for construction of a student union building was discussed by trustees at the recent annual meeting of both the Foundation and the Institute.

The following Institute officers all were reelected: W. Lyle Holmes, Jr., Archibald Holmes & Sons, Chairman; Bertrand W. Hayward, president; Ralph Whitaker, Fred Whitaker Co., first vice president; C. Scott Althouse, Althouse Chemical Co., second vice president, and Julius Zieget, Philadelphia Museum of Art, secretary-treasurer.

The Foundation also reelected the following officers: Everett L. Kent, Kent Manufacturing Co., president; Theodore B. Hayward, formerly of Swift & Co., first vice president; Lindsey H. Mason, Philadelphia Dye Works, second vice president; Richard S. Cox, PTI Dean Emeritus, executive secretary and treasurer, and Russell C. Osborne, R. C. Osborne Co., treasurer.

Smith, Drum Sold

Turbo Machine Co., Lansdale, Pa., has purchased Smith, Drum & Co., Philadelphia, one of the country's oldest manufacturers of textile dyeing and finishing machinery. The plant is retained by Smith, Drum & Co. but inventory and work-in-progress are being moved to the Turbo plant.

Smith, Drum products, sales of which have been reported running to over $1,500,000 annually, include hosiery and sweater dyeing machines, skein and raw stock dyeing machines, and high-pressure dyeing equipment for package and beam dyeing.

Turbo manufactures a preboarding machine for the hosiery industry, heat-setting machines for synthetic fibers, staplers and crimpers, sweater setters, and finishing machines for the high pile trade.

New Nylon Carpet Staple

American Enka Corp. has announced commercial production of an improved quality nylon 6 staple fiber made especially for the tufted carpet trade in both 6 and 15 denier. The improved fiber has a normal crimp from 12 to 15 waves per inch and the crimp is retained during normal dyeing and finishing operations, the company reported.

Solvay to Expand Plant

Solvay Process Division, Allied Chemical & Dye Corp., has announced it will more than double the capacity of its vinyl chloride monomer operation at its Moundsville, W. Va., plant. The company reported the expansion program reflects heavy demand for consumer products made from vinyl plastics with subsequent increased requirements for Solvay's vinyl chloride monomer.

Consumer items concerned include film and sheet for household draperies, shower curtains, raincoats, automobile interiors and upholstery. In addition, varied applications for vinyl resins are found in the electric wire and cable, adhesive, paint, toy and floor tile industries.

New Union Carbide Plant

Union Carbide Corp. has announced it will build its eighth major chemical plant in Putnam County, West Virginia. The new plant will provide additional ethylene and propylene which are the raw materials for most of Carbide's chemicals. The facility, to be completed in 1960, also will produce ethanol, ethylene oxide and isopropanol. The plant will be located near Winfield, on the south bank of the Kanawha River.

Coloray Promotion Plans

Fifteen consumer publications with a combined readership of 32,000,000 will be used this fall to advertise fabrics of Coloray, the solution-dyed rayon fiber produced by Courtaulds (Alabama) Inc. Backing up this promotion will be merchandising aids of reprints of advertisements, suggested newspaper advertising, window display ideas and sales education booklets, Courtaulds reported.

History of Lace-Making

The history of lace-making from its early stages as a skilled handcraft is traced through its adaptation to mass machine production by David E. Schwab in his revised book, "The Story of Lace and Embroidery." Mr. Schwab supplements his text with the parallel story of embroidery and handkerchiefs. (Published by Fairchild Publications, Inc.; cloth bound, 115 pages; $4.50 per copy.)

(Continued on Page 73)

American Viscose Corp.

Effective November 1, 1956
Revised June 10, 1957

Super Rayflex

Denier	Filament	Twist	Beams	Cones
1100	490	0	$.63	$.63
1100	490	4.1Z	.63	....
1650	980	0	.58	.58
1650	980	4.1Z	.58	....
2200	980	0	.57	.57

Tire Yarn

1100	490	2.7Z	.59	....
1650	980	0	.55	.55
1650	980	3.6Z-4.1Z	.55	....
2200	980	0	.54	.54

High Strength

1150	490	3.1Z	.59	.59
1230	490	3.1Z	.59	.59
1650	980	4Z	.55	.55
1875	980	4Z	.55	.55

Super Rayflex, Tire Yarn and High Strength yarns are sold "Not Guaranteed for Dyeing."

Tire Fabric

	Tire Yarn	Super Rayflex
1100/490/2	$.69	$.73
2200/980/2	.625	.655

Above prices based on 80% minimum Carcass, 15% maximum Top Ply, 5% maximum Breaker.

1650/980/2

• Production Factor

525	Open	Carcass	$.635	$.665
300	490	Top Ply	.645	.675
115	275••	Breaker	.67	.70

• Determined by dividing total ends by picks.

•• Orders limited to 5% of total 1650 Fabric booked for any given period.

The following deposit charges are made on invoices:

Beams	$55.00 each
Crates (Metal)	75.00 each
Fabric Shell Rolls	3.50 each

Same to be credited upon return in good condition—freight collect
Terms: Net 30 days.

Celanese Corporation of America

Effective December 27, 1955
Supersedes September 12, 1955

Fortisan Yarn Prices

Denier	Packages	Natural	Black
30/2.5/40	2 lb. Cones	$3.00 lb.	$3.35 lb.
60/2.5/80	4 " "	2.40 "	2.75 "
90/2.5/120	4 " "	2.25 "	2.60 "
120/2.5/160	4 " "	2.05 "	2.40 "
150/2.5/180	4 " "	1.95 "	2.30 "
270/2.5/360	4 " "	1.85 "	2.20 "
300/2.5/360	4 " "	1.85 "	2.20 "
60/2.5/80 Olive Green—Spun Dyed—OG106		4 lb. Cones	3.50 lb.

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U. S. A. east of the Mississippi River.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

Fortisan-36 Rayon Yarn
Bright

Denier and Filament	Twist	4# cones	8# cones	Tubes	Beams
270/280	0.8Z	$2.30			
300/280	0.8Z	$2.05			
300/280	3Z	$2.20			
400/400	0.8Z	$1.75			$1.70
400/400	0			$1.75	
800/800	0.8Z	$1.25	$1.25		$1.20
800/800	3Z	$1.40			
800/800	0			$1.25	
1600/1600	0.8Z	$1.15	$1.15		$1.10
1600/1600	2½Z	$1.30			
1600/1600	0			$1.15	

Terms: Net 30 days. Shipments prepaid to any destination in U. S. A. East of the Mississippi River. Shipments West of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.
Current Prices
Effective with shipments April 17, 1957

"Super Cordura"•

Den Fil	Turns/In	All Packages
1100-480	2	$.63
1100-720	2	.63
1200-720	2	.63
1250-480	2	.63
1530-960	2	.61
1600-960	2	.58
1650-720	2	.58
1650-1100	2	.58
1800-1100	2	.58
1900-720	2	.58
2200-960	2	.57
2200-1440	2	.57
2400-1440	2	.57
2450-960	2	.57

Terms: Net 30 days.
Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

• "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective November 1, 1956

Unbleached Bright High Tenacity Yarns

SINGLE END BEAMS AND CONES:

Den.	Fil.	Turns Per In.	4.4 Lb. Cones	Beams	2.2 Lb. Tubes	4.4 Lb. Tubes
1100	480	1.5 "Z"	.59	.59	.59	.59
1650	720	1.5 "Z"	.55		.55	.55
2200	1000	1.5 "Z"	.54	.54	.54	.54
3300	1440	1.5 "Z"	.54	.54	.54	.54
4400	2000	1.5 "Z"	.54	.54	.54	.54

"Above Prices apply to Type 100. Type 200 Tyron Prices are 3¢ more."

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points east of the Mississippi River.

Prices are subject to change without notice.

North American Rayon Corp.

High-Strength Yarns—SUPER-NARCO

		Twist	Cones	Beams
1650	720	3Z		$.55
1850	720	3Z	$.55	
Super High Strength Yarns—				
1650	720	1.5Z	.58	.58

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates if sold f.o.b delivery point.

ACETATE FILAMENT YARN

American Viscose Corp.

Current Prices
Effective December 21, 1956

Bright and Dull

• Intermediate Twist

Denier & Filaments	Cones & 4-6 Lb. Tubes	Twister Tubes	Warps	Spinning Cones	Twist Warps
55/14	$1.04	$1.02	$1.05	$.98	$.99
75/20	1.00	.98	1.01	.94	.95
100/28	.95	.93	.96	.89	.90
120/32	.86	.84	.87	.80	.81
150/41	.77	.76	.78	.72	.73
200/54	.73	.72	.74	.69	.70
300/80	.69	.68	.70	.65	.66

• Standard Twist 2¢ additional.
Terms: net 30 days.

Celanese Corp. of America

Current Prices
Effective December 20, 1956

Bright and Dull

	Intermediate Twist				Spinning Twist		
Denier and Filaments	4 & 6-Lb Cones	Beams	4 & 6-TM Tubes	4-Pound Cheeses	Cones	Beams	O Twist Tubes
45/13	$1.17	$1.18	$	$	$	$1.12	$ ....
55/15	1.04	1.05	....	....	.98	.99	.925
75/20	1.00	1.01	.98	....	.94	.95	.84
75/50	1.02	1.03	1.00	....	....	....	.89
100/26-40	.95	.96	.93	....	.89	.90	.81
120/40	.86	.87	.85	....	.80	.81	....
150/40	.77	.78	.77	.77	.72	.73	.69
200/52	.73	.74	.73	....	.69	.70	....
300/80	.69	.70	.69	....	.65	.66	.63
450/120	.67	.68	.67	....	.63	.64	....
600/160	.65	.66	.65	....	....	....	....
900/80-240	.63	.64	.63	....	....	....	.61

150 Denier 12-TM Tubes	.76
55/0/15 Dull Tricot Beams	.985
2-Pound Cheeses	.01 Less Than 4-Pound Cheeses
2-BU and 4-Bu Tubes	Same Price as 4 and 6-Lb. Cones
2-Lb. Twist Tubes	.01 Less Than 4 & 6-Lb. Twist Tubes on 120, 200 and 300 Denier Intermediate Twist

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.

Celaperm Filament Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.37	$1.38	$1.31	$1.32
75/20	1.34	1.35	1.28	1.29
100/26	1.28	1.29	1.22	1.23
120/40	1.19	1.20	1.13	1.14
150/40	1.11	1.12	1.06	1.07
200/52	1.05	1.06	1.01	1.02
300/80	1.01	1.02	.97	.98
450/120	.99	1.00	.95	.96
600/160	.97	.98	....	....
900/80	.94	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Wool Blends (Continued from Page 44)

novelty effects in dyeing or to give strength support. The introduction of textured yarns by mechanical bulking or crimping operations has provided the fabric designer with a new working tool to get effects not readily attainable with either spun or filament yarns. In some cases such yarns have been woven or knitted to yield wool-like textures, but they are not of interest in considering possibilities with wool. On the other hand, a knitted amount of work has been carried out using worsted warp yarns and "Ban-Lon" textured Dacron filling in tropical weight and shetland suitings. It is claimed that fabrics of this type provide the attractive hand and appearance of worsted along with the desirable performance characteristics of Dacron.

It is particularly timely to note the press reports of the industry's demands for further curbs on wool, imports of which are claimed to be a threat to the country's security. Wool manufacturing machinery is down about 50% since World War II; close to 200 wool textile plants have shut down during the past 10 years and fabric production has dropped by over 40%.

While emphasis is placed on the effect of imports which have shown tremendous gains, attention has also been focused on the influence of the man-made fibers in competing with wool. Since we are well aware of the fact that there is a world shortage of fine wools and considering the seriousness of a restricted capacity to provide the needed wool and worsted materials in any emergency, it would seem logical that a greater effort should be made to explore the potential of man-made fibers in blends.

Effective March 11, 1955

Celaperm Black Yarn Prices

Denier and Filaments	Intermediate Twist 4 & 6-Lb. Cones	Beams	Spinning Twist Cones	Beams
55/15	$1.17	$1.18	$1.11	$1.12
75/20	1.14	1.15	1.08	1.09
100/26	1.08	1.09	1.02	1.03
120/40	.99	1.00	.93	.94
150/40	.91	.92	.86	.87
200/52	.85	.86	.81	.82
300/80	.81	.82	.77	.78
450/120	.79	.80	.75	.76
600/160	.77	.78	....	....
900/80	.74	....	....	....

3 to 5 Turns on Cones or Beams — $.02 Additional

Terms: Net 30 days. Prices per pound F.O.B. shipping point, lowest transportation allowed to destination in U.S.A. east of the Mississippi River.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Acetate

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Bms.
45-13	$1.03	$1.11		$1.12			$1.17	$1.18
55-18	.925	.985		.99			1.04	1.05
55-24	.925	.985		.99			1.04	1.05
75-24	.84	.94	.94	.95		$.98	1.00	1.01
75-50				.97		1.00	1.02	1.03
100-32	.81		.89	.90		.93	.95	.96
120-40	.77	.80	.80	.81		.85	.86	.87
120-50	.77	.80	.80	.81		.85	.86	.87
150-40	.69	.72	.72	.73	.77	.77	.77	.78
200-60	.68		.69	.70	.73	.73	.73	.74
240-80			.67				.71	
300-80	.63	.65	.65	.66	.69	.69	.69	.70
450-120	.63		.63	.64	.67	.67	.67	.68
600-160			.62	.63	.65	.65	.65	.66
900-44	.61		.62	.63	.63	.63	.63	.64
900-240			.62	.63	.63	.63	.63	.64
1800-88			.60	.61	.61	.61	.61	.62
2700-132			.60	.61	.61	.61	.61	.62
3000-210					.61	.61	.61	.62

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Intermediate Twist Price.

(B) 1 lb. ⅜" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

Color-Sealed

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist Twisted Tubes 2 Lb.	4 & 6 Lb.	Cones	Beams
55-18	$1.245	$1.315		$1.32	$1.35	$1.35	$1.37	$1.38
75-24	1.18	1.28	$1.28	1.29	1.32	1.32	1.34	1.35
100-32	1.14		1.22	1.23	1.26	1.26	1.28	1.29
150-40	1.03	1.06	1.06	1.07	1.10	1.11	1.11	1.12
200-60	1.00		1.01	1.02	1.04	1.05	1.05	1.06
300-80	.95	.97	.97	.98	1.00	1.01	1.01	1.02

(A) Regular Twist—Add $.02 to Intermediate Twist Price.

Black

Denier & Filament	Zero Twist Tubes	Beams	Low Twist Cones	Beams	Intermediate Twist 2 & 4 Lb. ⅝" Tbs.	4 & 6 Lb. Tw. Tbs.	Cones	Beams
55-18	$1.045	$1.115		$1.12		$1.15	$1.17	$1.18
75-24	.98	1.08	$1.08	1.09		1.12	1.14	1.15
100-32	.94		1.02	1.03		1.06	1.08	1.09
150-40	.83	.86	.86	.87		.91	.91	.92
200-60	.80		.81	.82		.85	.85	.86
300-80	.75	.77	.77	.78	.81	.81	.81	.82
450-120			.75	.76	.79	.79	.79	.80
600-160			.73	.74	.77	.77	.77	.78
900-240			.73	.74	.74	.74	.74	.75

(A) Regular Twist (2.9 and 5 T.P.I.)—add $.02 to Int. Twist Price.

(B) 1 lb. ⅜" Tubes—add $.02 to 2 & 4 lb. ⅝" Tube Price.

(C) 2 lb. Twisted Tubes are the same as 4 & 6 lb. Twisted Tubes except on 150, 200 and 300 denier Intermediate Twists where the price is $.01 less.

Specialty Yarns

Type 20	Same Price as Regular Yarn	
Type C	Same Price as Regular Yarn	
		$1.39

Thick & Thin

Denier & Filament	Natural Cones	Beams	Black Cones	Beams	Color-Sealed Cones	Beams
200-64 Int. Twist	1.05		$1.15		$1.35	
200-64 Reg. Twist	1.08	$1.09	1.17	$1.21		

Terms: Net 30 days. Subject to change without notice.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective December 21, 1956

"Estron"* Yarn, Bright or Dull — White

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Tubes	Beams	Low Twist Cones	Beams	Zero Twist Tubes	Tricot Beams Spun Twist	Zero Twist
55/13	$1.06	$1.04	$1.02	$1.05	$.98	$.99	$.92½	$.99	$.98½
75/19	1.02	1.00	.98	1.01	.94	.95	.84	.95	....
75/49	1.04	1.02	....	1.03	....	....	....	....	....
100/25	.97	.95	.93	.96	.89	.90	.81	....	....
120/30	.88	.86	.84	.87	.80	.81	....	....	....
150/38	.79	.77	....	.78	.72	.73	.69	....	....
200/50	.75	.73	....	.74	.69	.70	....	....	....
300/75	.71	.69	....	.70	.65	.66	.63	....	....
450/114	.69	.67	....	.68	.63	.64	....	....	....
600/156	.67	.65	....	.66	.62	.63	.63	....	....
900/230	.65	.63	....	.64	....	....	.61	....	....
Heavier	....	....	....	....	....	....	.56	....	....

Current Prices—December 19, 1955

"Chromspun"*—Standard Colors (Except Black)

Denier & Filament	Regular Twist Cones	Beams	Intermediate Twist Cones	Beams	Low Twist Cones	Beams
55/13	$1.39	$1.40	$1.37	$1.38	$1.31	$1.32
75/19	1.36	1.37	1.34	1.35	1.28	1.29
100/25	1.30	1.31	1.28	1.29	1.22	1.23
150/38	....	....	1.11	1.12	1.06	1.07
300/75	....	....	1.01	1.02	.97	.98
450/114	....	....	.99	1.00	.95	.96
900/230	....	....	.94	.95	....	....

Current Prices

"Chromspun"*—Black

Denier & Filament	Regular Twist Cones	Intermediate Twist Cones	Beams	Low Twist & Spun Twist Beams
55/13	$1.19	$1.17	$1.18	$1.12
75/19	1.16	1.14	1.15	1.09
100/25	1.10	1.08	1.09	1.03
150/38	.93	.91	.92	.87
200/50	.87	.85	.86	.82
300/75	.83	.81	.82	.78
450/114	.81	.79	.80	.76
900/230	.76	.74	.75	....

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in the United States east of Mississippi River. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax

* "Estron" and "Chromspun" are trade-marks of the Eastman Kodak Co.

RAYON STAPLE and TOW

American Viscose Corp.

Current Prices

Rayon Staple

	Bright and Dull
Regular	$ .31
Extra Strength	
1.0 Denier	.34
"Viscose 32A"	.36
"Avisco Crimped"	
1.25 Denier	.34
3.0 & 5.5 Deniers	.32
8.0 & 15.0 Deniers	.33
"Avisco Super L"	
8.0, 15.0 & 22.0 Deniers	.35
Short Staple Blend	.32

Rayon Tow

Grouped Continuous Filaments (200,000 Total Denier)	
1.5, 3.0 & 5.5 Denier Per Filament	.32
9.0 Denier Per Filament	.34
Grouped Continuous Filaments (4400/300 & 2000/1500)	.65

Prices of other descriptions on request.

Terms: Net 30 days.

Celanese Corp. of America

Current Prices

Rayon Tow

	Bright & Dull
1.5, 3, 5 D.P.F.	.32
8 D.P.F.	.34

Courtaulds (Alabama) Inc.

Effective August 22, 1957

Rayon Staple

	Bright	Dull
1½ and 3 denier	$.31	$.31
Available in 1½", 1-9/16" and 2".		

Crimped Rayon Staple

3 and 5½ denier	$.32	$.32
Available in 1-9/16" and 3".		
3 denier		.32
Available in 2".		

9/11/57

News

(Continued from Page 69)

Ch. W. Rice, Jr.

Charles W. Rice, Jr. has been named advertising and promotion manager for American Cyanamid Co.'s Creslan acrylic fiber. He was for 14 years advertising and public relations director of American Viscose Corp.

J. R. Kennedy

J. T. Robert Brownridge has joined Celanese Corp. of America as technical and economic evaluation engineer in the company's Textile Division. In the same division **Fletcher Horn** is now assistant to the general manager. **John B. Sowell, Jr.** has joined the company as maintenance and safety engineer in the Charlotte development laboratories and **James R. Kennedy** has been appointed vice president in charge of industrial relations, succeeding **Edward R. Allan.**

W. R. Monroe

W. R. Monroe has been appointed president of the Johnson Corp., succeeding **R. O. Monroe** who is now chairman of the board of directors. Other appointments include **R. W. Gotschall,** vice president in charge of sales and **T. O. Monroe,** secretary and treasurer of Johnson Export Corp. and vice president of Johnson-Hamstra of Holland.

William D. Benson has resigned from the post of vice president in charge of sales for Industrial Rayon Corp.

R. N. Apprich, vice president in charge of sales for Textile Machine Works, has retired after 39 years of service with the company.

Deaths

Saul F. Dribben, retired president and chairman of the board of Cone Mills, Inc. has died at the age of 77.

David E. Linn, manager of sales service for Corn Products Sales Co. died recently of coronary thrombosis.

Roy J. Beauregard, section superintendent of bleaching and chemical control in Dan River Mill's Finishing Plant, died unexpectedly while undergoing surgical treatment.

Robert Paul Masland, first vice president and chairman of the finance committee of C. H. Masland & Sons, died recently after a long illness.

"Coloray" Spun Dyed Rayon Staple

	1½ Den. 1-1/16"	3 Den. 2"	4½ Den. 6"	Price per Lb.
	(Code numbers for color and denier)			
Black	1404	1419	1425	37¢
Tan	8004	8019	8025	39¢
Medium Brown	8804	8819	8825	39¢
Silver Grey	1004	1019	1025	39¢
Mocha	7704	7719	7725	39¢
Dark Brown	8604	8619	8625	40¢
Ecru	7904	7919	7925	40¢
Slate Grey	0804	0819	0825	43¢
Light Blue	4004	4019	4025	44¢
Sulphur	2004	2019	2025	44¢
Nugget	2304	2319	2325	44¢
Apple Green	5104	5119	5125	45¢
Aqua	4704	4719	4725	45¢
Rose	5804	5819	5825	45¢
Sage	5304	5319	5325	45¢
Crystal Blue	3904	3919	3925	45¢
Peacock Blue	4604	4619	4625	46¢
Medium Blue	4204	4219	4225	48¢
Dark Blue	4404	4419	4425	49¢
Hunter Green	5404	5419	5425	49¢
Indian Yellow	2504	2519	2525	49¢
Pink	6004	6019	6025	50¢
Dawn Pink	5904	5919	5925	50¢
Turquoise	4804	4819	4825	50¢
Malachite Green	5204	5219	5225	51¢
Red	7004	7019	7025	56¢

(In addition to the above, Black is also available in:
1-12 den. 1⅛" (1401) 3 den. 1-9/16" (1416) 4½ den. 2" (1423)
3 den. 1⅛" (1413) 3 den. 2½" (1420) 4½ den. 6" (1425)

Terms: Net 30 days, f.o.b. LeMoyne, Alabama. Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Rayon Co.

Div. Bigelow-Sanford Carpet Co., Inc.

Rayon Staple

Effective February 8, 1956

REGULAR

1.5 denier Bright
1½" and 2" ..... Withdrawn

VISCALON 44

15 denier 3" Dull ..... Withdrawn

VISCALON 66 (Crimped)

8 denier 3" Bright ..... 33¢
15 denier 3" Bright ..... 33¢
15 denier 3" Dull ..... 33¢

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"

	8 Denier Bright	15 Denier Dull	15 Denier Bright
Cloud Grey	45¢	45¢	....
Sandalwood	45¢	45¢	....
Nutria	45¢	45¢	....
Sea Green	45¢	45¢	....
Mint Green	45¢	45¢	....
Champagne	45¢	45¢	....
Cafe Brown	55¢	....	55¢
Midnight Black	45¢	....	45¢
Gold	48¢	48¢	....
Turquoise	45¢	45¢	....
Melon	48¢	48¢	....
Capri Blue	45¢	45¢	....
Charcoal Grey	45¢	45¢	....
Coco	46¢	46¢	....
Sable	47¢	....	47¢
Tangerine	58¢	....	58¢
Chinese Red	59¢	....	59¢
Larkspur Blue	45¢	45¢	....
Royal Blue	55¢	....	55¢
Lemon Peel	46¢	....	46¢
Kelly Green	46¢	....	46¢
Bitter Green	55¢	....	55¢

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

ACETATE STAPLE and TOW

Celanese Corp. of America

Current Prices

Staple

Celanese Acetate Staple	Bright & Dull
3, 5.5 & 8 Denier (Regular Crimp or High Crimp)	$.34
2, 12 & 17 Denier (Regular Crimp or High Crimp)	.35
35 Denier	.38
50 Denier	.40
Type F — 5.5, 8, 12, 17 Denier	.35
Type K — (Available under Celanese License Agreement)	.39
⅝" to ⅞" length (All Deniers)	.03 (premium)
Variable Acetate Fiber	.32
35 Denier Flat Filament Acetate	.40
Non-Textile Acetate Fibers	.27*

Tow (Celatow)

3, 5.5 & 8 Denier	$.36
2, 12 & 17 Denier	.37
35 Denier	.40
50 Denier	.42

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A. east of the Mississippi River. Shipments west of the Mississippi will be made on a collect freight basis and allowance will be made for the lowest transportation cost to the point of river crossing.

Prices subject to change without notice.
All previous prices withdrawn.
* No transportation allowed (F.O.B. shipping point).
Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our acknowledgments of orders.

NON CELLULOSIC YARN

NYLON

Allied Chemical and Dye Corporation

Caprolan®†

Effective April 15, 1957

Denier	Filament	Turn/In.	Twist	Type**	Package	1st Grade Price/Lb	2nd Grade Price/Lb
200	32	¾	Z	B	Bobbin	$1.49	$1.44
560	32	1	Z	HB	Aluminum Tube	1.39	1.29
840	136	½	Z	HBT	Aluminum Tube	1.30	1.20
840	136	½	Z	HBT	Beams	1.30	1.20
Heavy Yarn						Price/Lb.	
2100	408	0	O	HB	Paper Tube*	$1.27	
2100	112	0	O	HB	Paper Tube*	1.30	
2500	408	0	O	HB	Paper Tube*	1.27	
3360	544	0	O	HB	Paper Tube*	1.26	
4200	680	0	O	HB	Paper Tube*	1.26	
4200	224	0	O	HB	Paper Tube*	1.29	
5000	816	0	O	HB	Paper Tube*	1.25	
5000	280	0	O	HB	Paper Tube*	1.28	
5800	952	0	O	HB	Paper Tube*	1.25	
7500	1224	0	O	HB	Paper Tube*	1.24	
10000	1632	0	O	HB	Paper Tube*	1.24	
15000	2448	0	O	HB	Paper Tube*	1.23	

Terms—Net 30 days.
Prices subject to change without notice.
All prices quoted F.O.B. Shipping Point.
Following are invoiced as a separate item.
Bobbins—45 cents each.
Aluminum Tubes—40 cents each.
Beams—$220.00 each.
Cradles for Beams—$53.00.
* Paper Tubes non-returnable, no charge.
** Type is used to describe luster and tenacity
B—Bright.
H—High Tenacity.
T—Heat Stabilized.

Lowest freight cost prepaid or allowed east of Mississippi River, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

† Allied Chemical's polyamide fiber.

American Enka Corporation

Nylenka Filament Yarn Prices

Effective June 1, 1957

Denier & Filament	Twist	Luster	Tenacity	Package	Yarn Weight per Package	Price per Pound, Std.	Price per Pound, Sub.
15/1	0.5Z	Semi-dull	Normal	Pirn	1 lb.	$5.25	$5.00
15/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	5.50	5.25
15/1	0.5Z	Dull	Normal	Pirn	1 lb.	5.30	5.05
20/2	0.5Z	Semi-dull	Normal	Pirn	1 lb.	4.60	4.30
30/6	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.36	2.21
40/8	0.5Z	Semi-dull	Normal	Pirn	2 lb.	2.01	1.81
50/13	0.5Z	Semi-dull	Normal	Pirn	2 lb.	1.91	1.76
200/16	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/16	0.5Z	Bright	Normal	Beam	....	1.54	....
200/34	0.9Z	Bright	Normal	Cone	4 lb.	1.49	1.44
200/34	0.5Z	Bright	Normal	Beam	....	1.54	....

Pirns charged at $.25 or $.45 each, depending upon type. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

The Chemstrand Corp.

Current Prices

Effective December 19, 1956

Denier	Filament	Twist	Type*	Package	Standard	Second
10	1	O	SD	Bobbins	$8.42	$7.81
15	1	O	SD	Bobbins	5.25	5.00
15	1	O	D	Bobbins	5.30	5.00
15	1	O	D	Spools	5.41	....
30	10	Z	SD	Bobbins	2.36	2.21
30	10	Z	HSD	Bobbins	2.36	2.21
30	26	Z	SD	Bobbins	2.49	2.21
40	7	Z	SD	Bobbins	2.11	1.81
40	13	Z	SD	Bobbins	2.01	1.81
40	13	Z	SD	Spools	2.11	....
40	13	Z	D	Bobbins	2.06	1.81
40	13	Z	D	Spools	2.16	....
50	17	Z	SD	Bobbins	1.91	1.76
70	34	Z	SD	Bobbins	1.71	1.66
70	34	Z	B	Bobbins	1.71	1.66
70	34	Z	D	Spools	1.86	....
80	26	Z	SD	Bobbins	1.71	1.56
100	34	Z	SD	Bobbins	1.65	1.60
100	34	Z	HB	Bobbins	1.70	1.60
140	68	Z	SD	Bobbins	1.60	1.55
200	34	Z	B	Bobbins	1.49	1.44
200	68	Z	SD	Bobbins	1.56	1.46
210	34	Z	HB	Bobbins	1.49	1.44
210	34	Z	HB	Spools	1.54	....
210	34	Z	HB	Beams	1.54	....
260	17	Z	HB	Bobbins	1.49	1.39
260	17	Z	HB	Spools	1.54	....
420	68	Z	HB	Bobbins	1.39	1.29
630	102	Z	HB	Bobbins	1.39	1.29
840	136	Z	HB	Tubes	1.34	1.24
840	140	Z	HB	Beams	1.30	1.20
840	140	Z	HB	Tubes	1.30	1.20

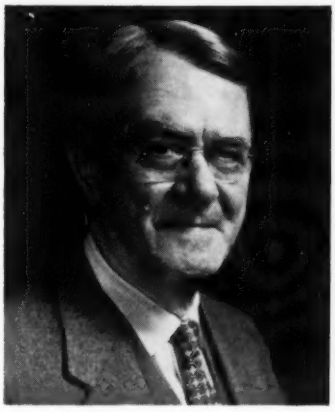
*Types: D—Dull; SD Semi-dull; B—Bright; H—High tenacity.

Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at $77.00 and $95.00 depending on type; and beams and crates for beams are invoiced at $220 and $25 respectively.

Prices subject to change without notice.

Wood Wins Olney Medal

P. J. Wood, technical director of Royce Chemical Co. and past president of the American Association of Textile Chemists & Colorists, was named the 14th winner of the AATCC's Olney Medal for 1957. The award, given each year for "outstanding achievement in the field of textile chemistry," is the highest AATCC honor.



P. J. Wood

Mr. Wood is a charter member of AATCC, and served as president in 1931 and 1932. He is a permanent member of the group's governing council and is presently chairman of the AATCC analytical methods committee, and a member of several other committees, including appropriations, archives, and research. Formal presentation of the Olney Medal will be made at the AATCC convention at the Statler Hotel, Boston, Mass., November 14, 15 and 16.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
7-1	0	200	Bobbin	$9.47	$8.82
10-1	0	200	Bobbin	8.42	7.82
12-1	0	200	Bobbin	7.35	6.85
15-1	0	200	Tricot Bms.	5.36	....
15-1	0	200	Bobbin	5.25	5.00
15-1	0	680	Tricot Bms.	5.41	....
15-1	0	680	Bobbin	5.30	5.00
20-1	0	200	Bobbin	4.42	4.12
20-7	0.5Z	200	Bobbin	2.91	2.61
20-7	0.5Z	200	Tricot Bms.	3.02	....
20-7	0.5Z	680	Bobbin	2.96	2.61
20-7	.05	680	Tricot Bms.	3.07	....
20-20	0.7Z	209	Bobbin	6.00	....
30-10	0.5Z	200	Bobbin	2.36	2.21
30-10	0.5Z	200	Tricot Bms.	2.46	....
30-10	0.5Z	680	Bobbin	2.41	2.21
30-10	0.5Z	680	Tricot Bms.	2.51	....
30-26	0.5Z	200	Bobbin	2.49	2.21
40-7	0.5Z	200	Bobbin	2.11	1.81
40-13	0.5Z	200	Bobbin	2.01	1.81
40-13	0.5Z	200	Tricot Bms.	2.11	....
40-13	0.5Z	400	Bobbin	2.13	1.90
40-13	0.5Z	670/680	Bobbin	2.06	1.81
40-13	0.5Z	670/680	Tricot Bms.	2.16	....
40-34	0.5Z	200	Bobbin	2.21	1.81
50-10	0.5Z	200	Bobbins	2.11	1.76
50-17	0.5Z	200	Bobbin	1.91	1.76
50-17	0.5Z	680	Bobbin	2.01	1.76
70-17	0.5Z	200	Bobbin	1.71	1.66
70-34	0.5Z	100/200	Bobbin	1.71	1.66
70-34	0.5Z	300	Bobbin	1.76	1.66
70-34	0	200	Tubes	1.71	1.66
70-34	0.5Z	680	Bobbin	1.76	1.66
80-26	0.5Z	200	Bobbin	1.71	1.56
100-34	0.5Z	200	Bobbin	1.65	1.60
100-34	0.5Z	300	Bobbin	1.70	1.60
100-34	0.5Z	680	Bobbin	1.70	1.60
100-50	0.5Z	200	Bobbin	1.71	1.60
140-68	0.5Z	200	Bobbin	1.60	1.55
140-68	0.5Z	300	Bobbin	1.65	1.55
200-34	0.7Z	100	Bobbin	1.49	1.44
200-34	0.7Z	680	Bobbin	1.54	1.44
200-68	0.7Z	200	Bobbin	1.56	1.46
210-34	0.7Z	300	Bobbin	1.49	1.44
210-34	0.7Z	300	Beam	1.54	....
210-34	0.7Z	330	Bobbin	1.59	1.44
260-17	1Z	300	Bobbin	1.49	1.39
400-68	0.7Z	100	Bobbin	1.39	1.29
420-68	1Z	300	Bobbin	1.39	1.29
780-51	0.7Z	300	Bobbin	1.39	1.29
800-140	0.5Z	100	Bobbin	1.39	1.29
840-140	0.5Z	300/700	Al. Tbs/Beam	1.30	1.20

Color-Sealed Yarn

Denier & Filament	Turns/Inch & Twist	Type	Package	1st Grade	2nd Grade
70-34	0.5Z	140	Bobbin	$2.06	$2.01
200-34	0.7Z	140	Bobbin	1.84	1.79
260-17	1Z	140	Bobbin	1.84	1.79

Industrial Yarn

				Price/Lb.
2520-420	0	300/700	Paper Tube	$1.27
4200-700	0	300/700	Paper Tube	1.25
5040-840	0	300/700	Paper Tube	1.25
7560-1260	0	300/700	Paper Tube	1.24
10080-1680	0	300/700	Paper Tube	1.24
15120-2520	0	300/700	Paper Tube	1.23

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 100—Bright, normal tenacity.
Type 140—Bright, color-sealed, black, normal tenacity.
Type 200—Semidull, normal tenacity.
Type 209—Semidull, normal tenacity.
Type 300—Bright, high tenacity.
Type 330—Bright, high tenacity, more heat & light resistant.
Type 400—Semidull, high tenacity.
Type 670—Dull, normal tenacity.
Type 680—Dull, normal tenacity.
Type 700—Bright, high tenacity.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Following are invoiced as a separate item.
Bobbins—25 cents or 45 cents depending on type
Aluminum Tube—40¢ each
Draw Winder Tubes—$.70 or $1.00 depending on type
Tire Cord Beams—$220.00 each
Cradles for Tire Cord Beams—$115.00 each
Tricot Beams—$95.00 each
Cradles for Tricot Beams—$130.00 each
(Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"*

Denier & Filament	Turns/Inch	Luster	Type*	Tubes 1st Gr.
30-14	0	Bright	55	$2.81
40-27	0	Semidull	56	2.41
40-27	0	Bright	55	2.41
40-27	0	Dull	57	2.46
70-34	0	Semidull	56	$2.01
70-14	0	Bright	55	2.01
70-34	0	Bright	55	2.01
70-34	0	Dull	57	2.06
100-34	0	Semidull	56	$1.94
140-28	0	Bright	55	1.89
150-34	0	Semidull	56	1.91
220-50	0	Bright	51	1.84
250-50	0	Bright	55	1.86
1100-250	0	Semidull	59	$1.50
1100-250	0	Bright	51	1.50

Terms: Net 30 Days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Yarn Types

* Type:
Type 51—Bright, high tenacity.
Type 55—Bright, normal tenacity.
Type 56—Semidull, normal tenacity.
Type 57—Dull, normal tenacity.
Type 59—Semidull, high tenacity.

Tubes are invoiced as a separate item at $.70 each.
All tubes are returnable for credit.
* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

NON CELLULOSIC STAPLE & TOW

ACRYLIC

The Chemstrand Corp.

Current Prices

"Acrilan"

Effective October 1, 1957

	Regular Acrilan	Acrilan 16
2.0 denier Semi-Dul and Bright staple & tow	$1.24	$1.24
2.5 denier Hi-Bulk Bright and Semi-dull staple and tow	1.16	1.16
3.0 denier Bright & Semi-dull staple & tow	1.16	1.16
5.0 denier Bright & Semi-dull staple & tow	1.16	1.16
8.0 denier Bright & Semi-dull staple	1.16	1.16
15.0 denier Bright & Semi-dull staple	1.01	1.05

Terms: Net 30 days. Freight prepaid to points east of the Mississippi River.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.

Textile Fibers Dept.

Effective November 1, 1955

Dynel Staple

Natural Dynel	
3, 6, and 12 Denier, Staple and Tow	$1.10 per lb.
24 Denier, Staple and Tow	1.05 per lb.
Dynel Spun with Light Colors: Whitened, Blond, or Gray	
3, 6, and 24 Denier, Staple and Tow	1.30 per lb.
Dynel Spun with Dark Colors: Black, Charcoal, and Brown	
3, 6, and 24 Denier, Staple and Tow	1.40 per lb.
Dynel Type 63 Bulking Fiber (3 Denier only)	Add $.05 per lb. to above prices

Prices are quoted f.o.b. South Charleston, W. Va.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon"** Acrylic Staple & Tow

Type 42 — 1st Grade

1.0 Denier Semidull & Bright—Staple only	$1.48
2.0 Denier Semidull & Bright	1.33
3.0 Denier Semidull & Bright	1.28
3.0 Denier Semidull Color-sealed Black	1.63
6.0 Denier Semidull & Bright	1.20
6.0 Denier Color-sealed Black	1.55
4.5 Denier Semidull	1.20
10.0 Denier Semidull	1.20

Tow—Total Denier 470,000
Staple Lengths—1½", 2", 2½", 3", 4½"
High Shrinkage Staple same price as Regular Staple

Type 39 — $1.06
This product is designed for *woolen system spinning* and is a blend of deniers (average 4.2) with a variable cut length.

Type 39A — $1.14
This product is designed for *woolen system spinning* and is a blend of predominately fine deniers (average 2.4) with a variable cut length.

Type 39B — $1.01
This product is designed for *woolen system spinning* and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

F.O.B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Terms: Net 30 Days.

** "ORLON" is DuPont's registered trade-mark for its acrylic fiber.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective November 15, 1956

"Verel"*

Deniers	Dull and Bright
2, 3, 5 and 8	$1.10 per pound

Prices are subject to change without notice.
Terms: Net 30 days. Payment—U. S. A. dollars.
Transportation charges prepaid or allowed to destination in the United States east of the Mississippi River. Seller reserves the right to select route and method of shipment. If buyer requests and seller agrees to a route or method involving higher than lowest rate buyer shall pay the excess of transportation cost and tax.
* "Verel" is a trade-mark of the Eastman Kodak Co.

NYLON

American Enka Corp.

Nylenka (Nylon Six Staple)

Denier	Luster	Length (Inches)	Price per pound
3	semi-dull	1⅛, 1½, 2, 2⅝, 3, 4½	$1.28
6	bright	3, 4½	1.28
8	bright	2⅝	1.20
10	bright	3	1.20
15	bright	3	1.20
15	semi-dull	3	1.20

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination on or east of the Mississippi River. In prepaying transportation charges, seller reserves the right to select the carrier used.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Staple and Tow

Denier	Type	Staple Lengths	Tow Bundle	1st. Grade Price/Lb.	2nd Grade Staple Only
1.5	200	1½"—4½"	None made	$1.33	$1.18
1.5	201	1½"—4½"	None made	1.35	1.20
3.0	100/200	1½"—4½"	430M	1.28	1.13
3.0	101/201	1½"—4½"	455M	1.30	1.15
6.0	100	1½"—4½"	330M	1.28	1.13
6.0	101	1½"—4½"	345M	1.30	1.15
15.0	100	1½"—6½"	330M	1.20	1.05
15.0	101	1½"—6½"	None made	1.22	1.07

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1⅛, 1½, 2, 2½, 3, 4½ and 6½

Types

Type 100 Bright, normal tenacity, not crimpset.
Type 101 Bright, normal tenacity, crimpset.
Type 200 Semidull, normal tenacity, not crimpset.
Type 201 Semidull, normal tenacity, crimpset.
These prices are subject to changes without notice.
Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

Industrial Rayon Corp.

Effective November 29, 1956

Nylon Staple

1.5 denier	$1.33 per lb.
2, 3 and 6 denier	1.28 per lb.
8 and 15 denier	1.20 per lb.

Bright and semi-dull, required length.

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points east of the Mississippi River.

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"* Staple and Tow

Denier	Luster	Type	Length	Tow Bundle	1st Gr.
1.25	Semidull	54	1¼"-3"	....	$1.56
1.5	Semidull	54	1¼"-3"	....	1.51
3.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
4.5	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41
6.0	Semidull	54	1¼"-4½" & Tow	375M-500M	1.41

Terms: Net 30 Days.

F. O. B. Shipping Point—Freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if shipped overland, or port of exit of purchaser's choice east of Mississippi River.

POLYVINYL ACETATE

American Viscose Corp.

Effective October 1, 1956

"Vinyon"® Staple

3.0 denier ½" unopened	$.80 per lb.
3.0 " 1¼" unopened	.80 per lb.
3.0 " 1¼" opened	.90 per lb.
3.0 " 2" opened	.90 per lb.
3.0 " 2" unopened	.80 per lb.
5.5 " 1" opened	.90 per lb.
5.5 " 3½" opened	.90 per lb.
5.5 " 3½" unopened	.80 per lb.

Terms: Net 30 days.

PROTEIN

Virginia-Carolina Chemical Corp.

Fiber Division

Effective January 15, 1951

"Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.00 per lb.	$1.05 per lb.
5 Denier	1.00 per lb.	1.05 per lb.
7 Denier	1.00 per lb.	1.05 per lb.

Bleached "Vicara" Staple

	Standard Crimp	Highly Crimped
3 Denier	$1.10 per lb.	$1.15 per lb.
5 Denier	1.10 per lb.	1.15 per lb.
7 Denier	1.10 per lb.	1.15 per lb.

Staple length ⅛ to 6 in.
Supplied in staple lengths or as continuous tow (270,000 filaments).
Terms: Net 30 days.
Prices f.o.b. Taftville, Conn. on 10% moisture regain basis.

Business Service Section

Exclusively for Business, Laboratory and Mill Services; Positions and Men Wanted; Business Opportunities; Mill Properties Wanted or For Sale; Reconditioned Machinery and Equipment, etc.

CLASSIFIED RATES
Per Inch
2 columns to the page, each column 8 inches deep

1	Inch	$8.00
2	Inches	15.00
3	Inches	22.50
4	Inches	28.00
5	Inches	35.00
6	Inches	42.00
7	Inches	49.00
8	Inches	52.00

Calendar of Coming Events

Oct. 2—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Oct. 2-3—National Cotton Council of America Chemical Finishing Conference. Hotel Statler, Washington, D. C.
Oct. 3-4—Quartermaster Association annual convention. Fairmont Hotel, San Francisco, Calif.
Oct. 7-9—Institute of Textile Technology, Charlottesville, Va. Technical Advisory Committee and Board of Trustees meetings.
Oct. 10—AATT Appalachian Group fall meeting. Kingsport, Tenn.
Oct. 10-11—Southern Textile Methods & Standards Association fall meeting. Clemson House, Clemson, S. C.
Oct. 12—Textile Operating Executives of Alabama fall meeting. Thach Auditorium, Auburn, Ala.
Oct. 15-18—Committee D-13 A.S.T.M. fall meeting. Sheraton McAlpin Hotel, New York, N. Y.
Oct. 19—Textile Associates Club dinner meeting. Stevenson's Restaurant, Westport, R. I.
Oct. 24—AATCC Rhode Island Section. Providence Engineering Society, Providence, R. I.
Oct. 28-31—National Industrial Packaging and Handling Exposition. Convention Hall, Atlantic City, N. J.
Nov. 1—AATCC Delaware Valley Section. Sheraton Hotel, Philadelphia, Pa.
Nov. 1—AATCC Western New England Section annual meeting. Hartford, Conn.
Nov. 6—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Nov. 14-15—A.I.E.E. Conference on Electrical Applications in the Textile Industry. N. C. State College, Raleigh, N. C.
Nov. 14-16—AATCC National Convention and Exhibition. Hotel Statler, Boston, Mass.
Dec. 4—AATT monthly meeting. Hotel Vanderbilt, New York, N. Y.
Dec. 5—AATT Appalachian Group meeting. Franklin Club, Elizabethton, Tenn.

Index to Advertisers

(*See previous or subsequent issues)

BUSINESS SERVICE

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REG. U. S. PAT. OFFICE

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Courtesy Hooker Electrochemical Co.

RESISTANCE—Heresite linings effectively prevent product contamination of such items as Sulphuric Acid, Rubber Latex, Formaldehyde, Battery Acid, Lactic Acid, Acetic Acid. These products will be delivered free from iron pickup.

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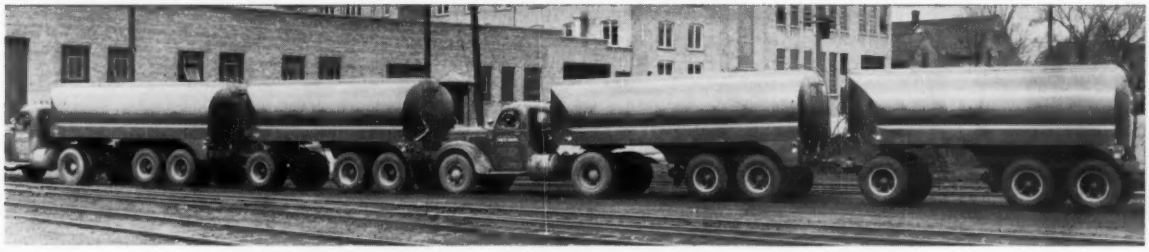

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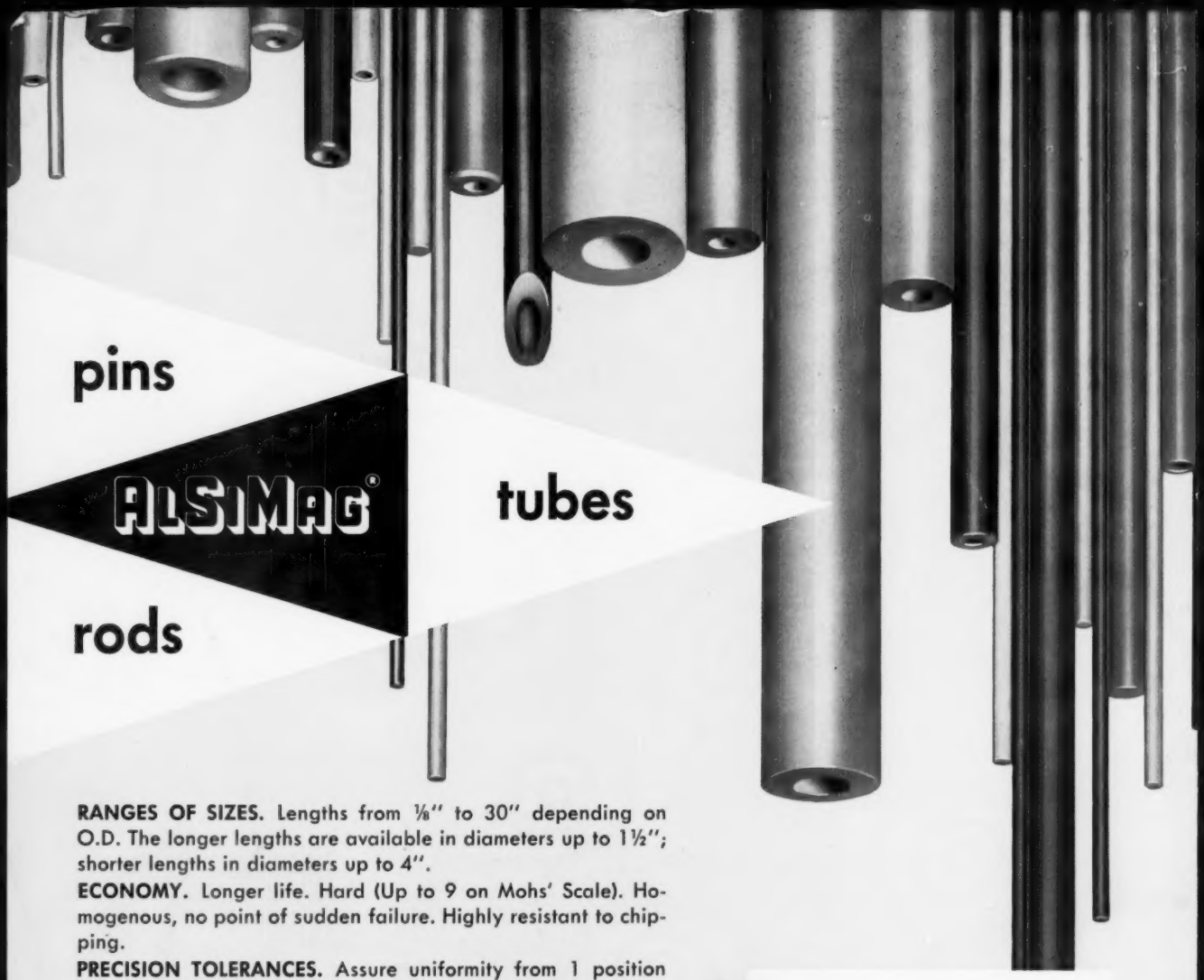

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REMEMBER: Combinations can often replace large, complicated (and expensive) guides!

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